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COMMERCIAL VESSELS

**Summaries of Reports of Investigations
into Marine Casualties and Accidents
Aboard Ships**

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Summaries of Commercial Vessel Marine Casualties and Accidents

This publication summarizes investigation reports on marine casualties and/or marine accidents involving commercial vessels and other craft, excepting fishing vessels, which were investigated by the Marine Casualty Investigation Division of Transport Canada and is published three times a year. There is another publication covering fishing vessels.

Note:

1. A glossary of terms and abbreviations used can be found at the end of this publication.
2. Unless stated otherwise, all times mentioned in this publication are local times.
3. Unless stated otherwise, all Regulations referred to in this publication are made pursuant to the Canada Shipping Act.
4. Unless stated otherwise, all vessels referred to in this publication are Canadian.

The full report of the summaries contained herein may be obtained by writing to:

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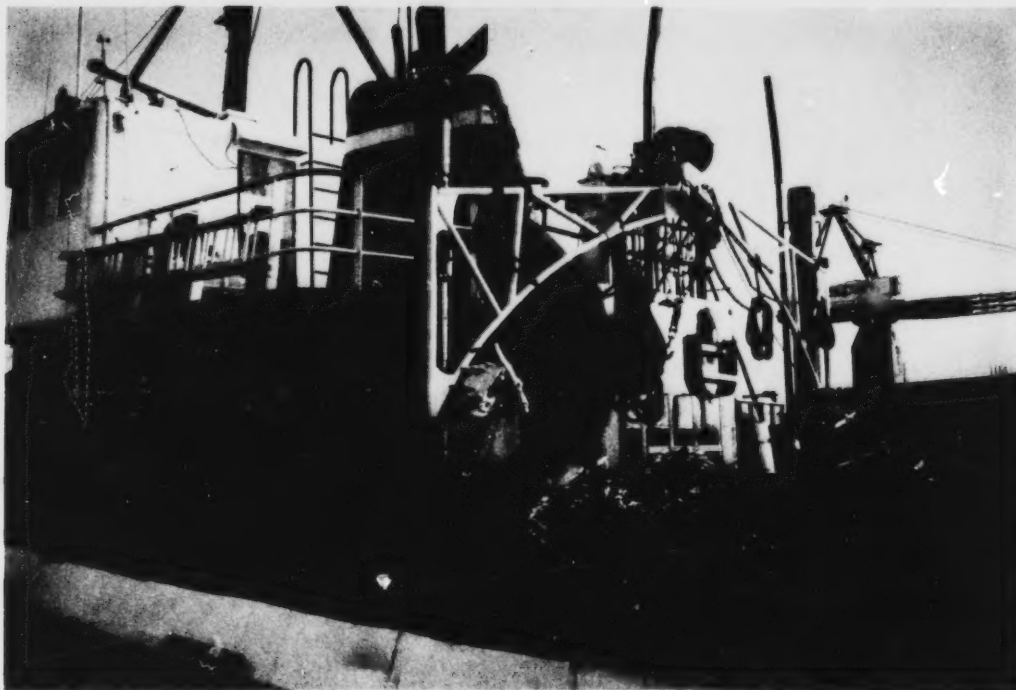
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Their contents may be deficient and misleading if used in any other process and are not to be used or admitted in evidence in any legal proceedings, either civil or criminal, arising out of any casualty described therein. The statements, opinions and findings in the reports and summaries are those of the Marine Casualty Investigations Division only and do not constitute admissions made by or on behalf of Her Majesty the Queen in right of Canada.

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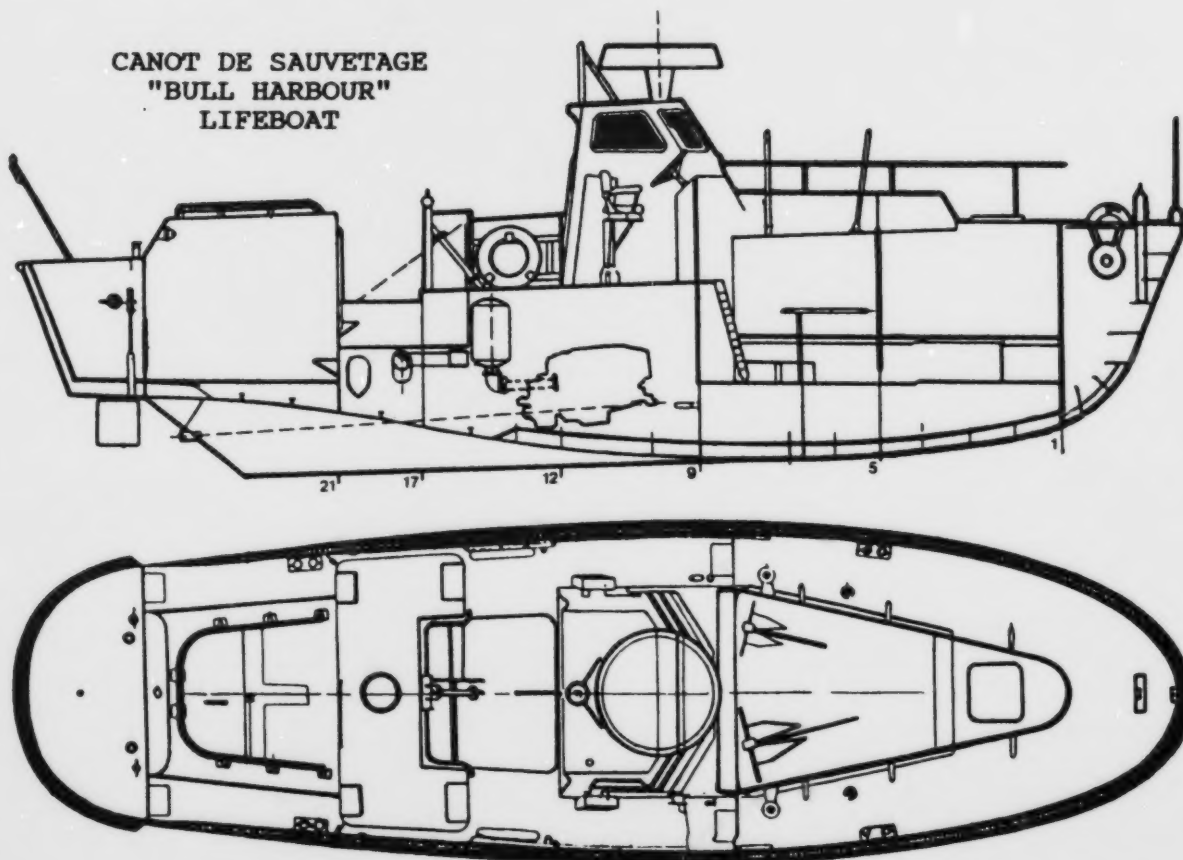
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"SEASPAN LORNE"



View of Deckhouse
Vue du rouf

CANOT DE SAUVETAGE
"BULL HARBOUR"
LIFEBOAT



General Arrangement
Plan d'ensemble

"SEASPAN LORNE"/BULL HARBOUR" lifeboat

**Collision with loss of life, Nahwitti Bar, B.C.
January 20, 1989.**

Summary

The Canadian registered "SEASPAN LORNE" is a twin-screw, 149 gross ton tug regularly engaged in towing barges between Vancouver and Port Alice, B.C. The Canadian Coast Guard vessel "BULL HARBOUR" is one of a number of variations of "Class 44" lifeboats in service in Canada, the United States and other countries. She had twin fixed-pitch propellers and her engines have a 'roll-stop' device intended to stop them in case of capsize.

In the afternoon of January 20, 1989, the tug "SEASPAN LORNE" with the loaded barge "GOLD RIVER" in tow, proceeding from Port Alice to Vancouver, B.C. was crossing Nahwitti Bar at the west entrance to Goletas Channel, B.C. The weather was good, however, a heavy westerly swell, combined with the strong ebb tide, was creating steep confused seas and heavy breakers on the bar. These conditions were not unusual but the tug was approaching the bar at slow speed when suddenly she was hit by a very large freak wave which smashed the after windows in the wheel-house, flooding the electronic equipment and damaging the hydraulic steering gear, rendering the tug almost unmanageable.

The tug requested the assistance of the "BULL HARBOUR" which had been observed a short distance away. The "BULL HARBOUR" came to the assistance of the tug and while alongside in the process of passing a towline to the "SEASPAN LORNE", the tug, carried by a following sea, suddenly surged forward and to starboard ramming the port side of the lifeboat amidships, causing the "BULL HARBOUR" to heel over to starboard and take water through her wheel-house window. The coxswain, who was steering the lifeboat, was strapped to his seat but the three seamen standing on the deck were thrown into the water.

The lifeboat managed to free herself from the tug and righted. The coxswain immediately retrieved the three crew members from the water but one was bleeding profusely from deep lacerations in his back caused by one of the lifeboat's propellers and was in shock. Despite immediate CPR and first aid he could not be revived. The lifeboat proceeded into Bull Harbour from where the victim was airlifted to Port Hardy hospital.

Arrangements were made to have another tug take over the tow and the "SEASPAN LORNE" then proceeded under her own power to a North Vancouver shipyard for repairs. The

lifeboat was later repaired at a Nanaimo boatyard; repair costs were in the order of \$80,000 for the tug and \$20,000 for the lifeboat.

Findings

On the afternoon of January 20, 1989 the Canadian Coast Guard lifeboat "BULL HARBOUR", while attempting to assist the Canadian tug "SEASPAN LORNE" on Nawhitti Bar at the west entrance to Goletas Channel, B.C., was rammed amidships, throwing three seamen on her deck into the water; one was fatally injured.

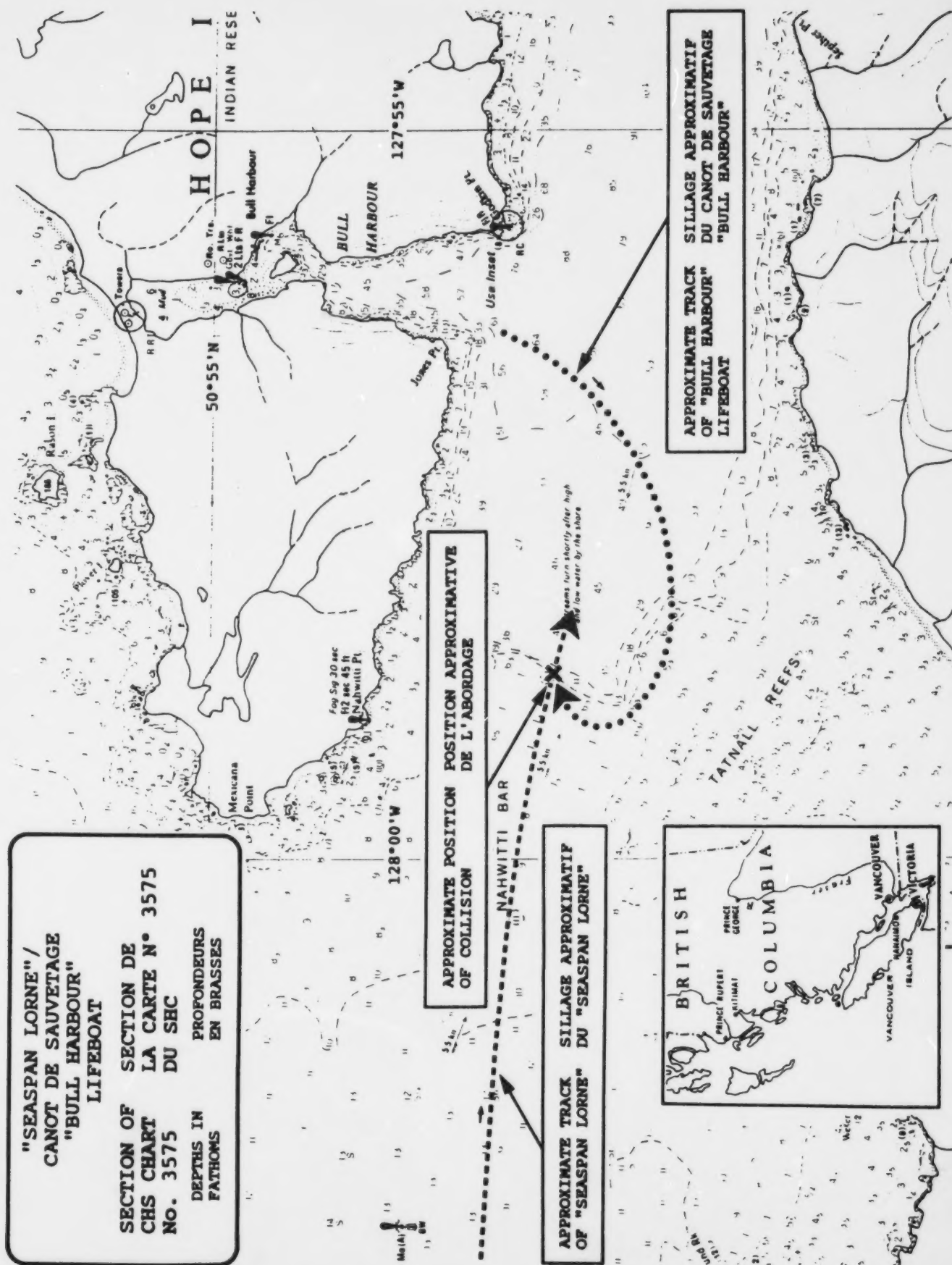
It would appear that the following factors contributed to the casualty:

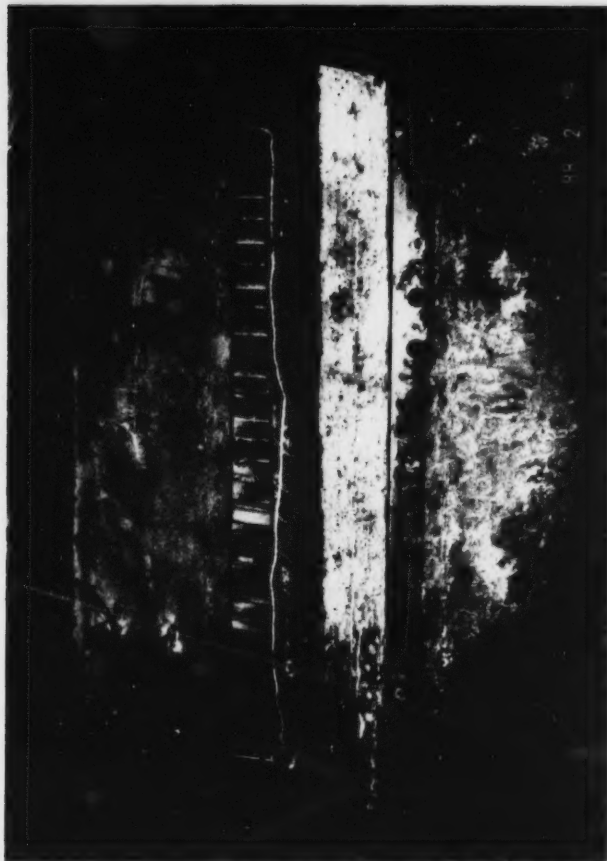
- a freak wave on the bar put the steering gear of the tug temporarily out of action and an emergency repair was effected;
- the tug, in danger of drifting on Tatnal Reefs, because of the uncertain reliability of the steering repair, requested a line on her bow from the lifeboat to ensure that she cleared the bar;
- while passing the towline to crewmembers on the bow of the tug, the lifeboat was rammed by the tug which had suddenly surged forward to starboard, carried on a deep swell;
- as the lifeboat did not capsize the roll-stop engine device did not engage, and
- deck-hand Thomas Shelby had his back severely lacerated by one of the lifeboat's propellers.

Other Findings

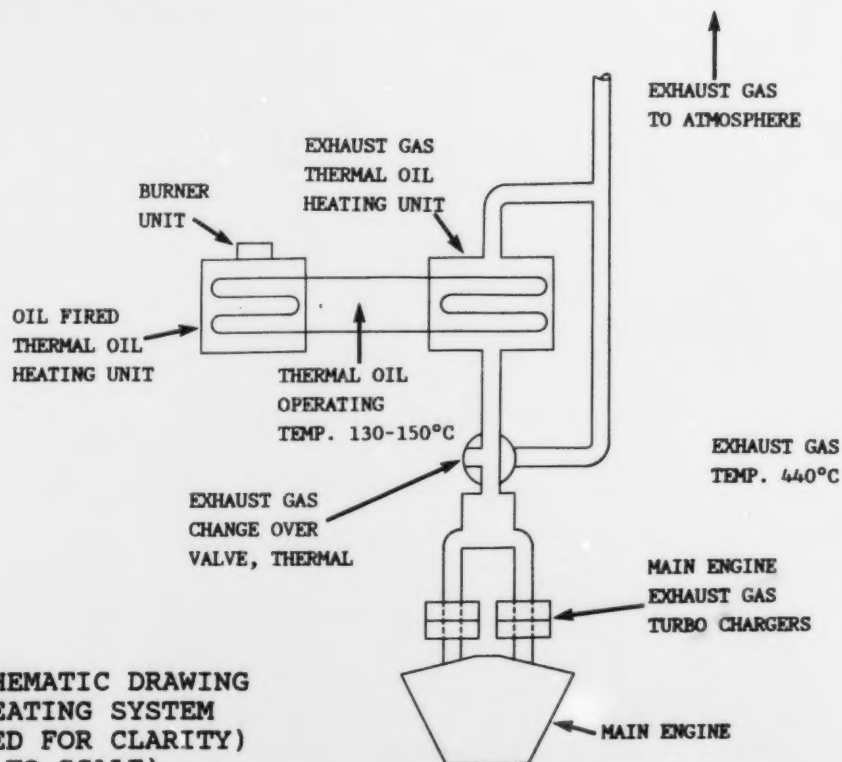
Both vessels were aware that freak waves could be expected but agreed to hand pass a tow line.

The line-throwing apparatus on the lifeboat is a powerful projectile and would not normally be considered for short range use.





Thermal exhaust gas boiler covers
and securing arrangements.



"HUMBER ARM" SCHEMATIC DRAWING
THERMAL OIL HEATING SYSTEM
(DETAILS OMITTED FOR CLARITY)
(NOT DRAWN TO SCALE)

"HUMBER ARM"

**Engine room explosion, one death, off Corner Brook, Nfld.,
February 17, 1988.**

Summary

The "HUMBER ARM" is a two-hold Ro-Ro newsprint carrier of 3,528 gross tons. She was built in Bremerhaven in 1976 and is registered in Monrovia. She is ice-strengthened and on a regular run to Corner Brook, Newfoundland. Her super-structure and engine-room are located aft and she has a single controllable-pitch propeller and a bow thruster. Electrical power is supplied by three Caterpillar generators and a shaft generator. During sea passages the main engine is operated on heavy fuel and the shaft generator is in operation.

On the evening of February 16, 1988, the vessel sailed from Corner Brook having loaded a cargo of newsprint and, at 1830, with the pilot disembarked, the sea passage began. At this time the fuel for the main engine was changed over to heavy fuel from the marine diesel oil which is normally used when manoeuvring. At 2025, the "HUMBER ARM" stopped because of overheating in the main engine cooling system. The main engine was briefly restarted on two occasions but eventually the entire engine-room staff were called out to attempt to rectify the problem.

The "HUMBER ARM" was operating in 9/10 total concentration of first year ice, the visibility was very poor in heavy snow and freezing rain and the wind was NNE force 4.

At 0520 the next morning, February 17, on restarting the main engine after cleaning the cooling system, there was an explosion in the exhaust gas thermal oil heat exchanger, a boiler which served as one of the domestic heating units. A motorman was killed when the blast of hot exhaust gas from the damaged boiler cover knocked him down on a steel platform, fracturing his skull.

Immediately after the explosion, the ship's crew administered oxygen and heart massage to the victim and within three hours, in the adverse weather conditions, he was airlifted from the ship to a hospital in Corner Brook where he was pronounced dead on arrival.

Damage to the vessel was considered minor affecting only the steel boiler covers. The "HUMBER ARM" sailed that evening to the U.S. after flushing the fuel system with diesel fuel.

Findings

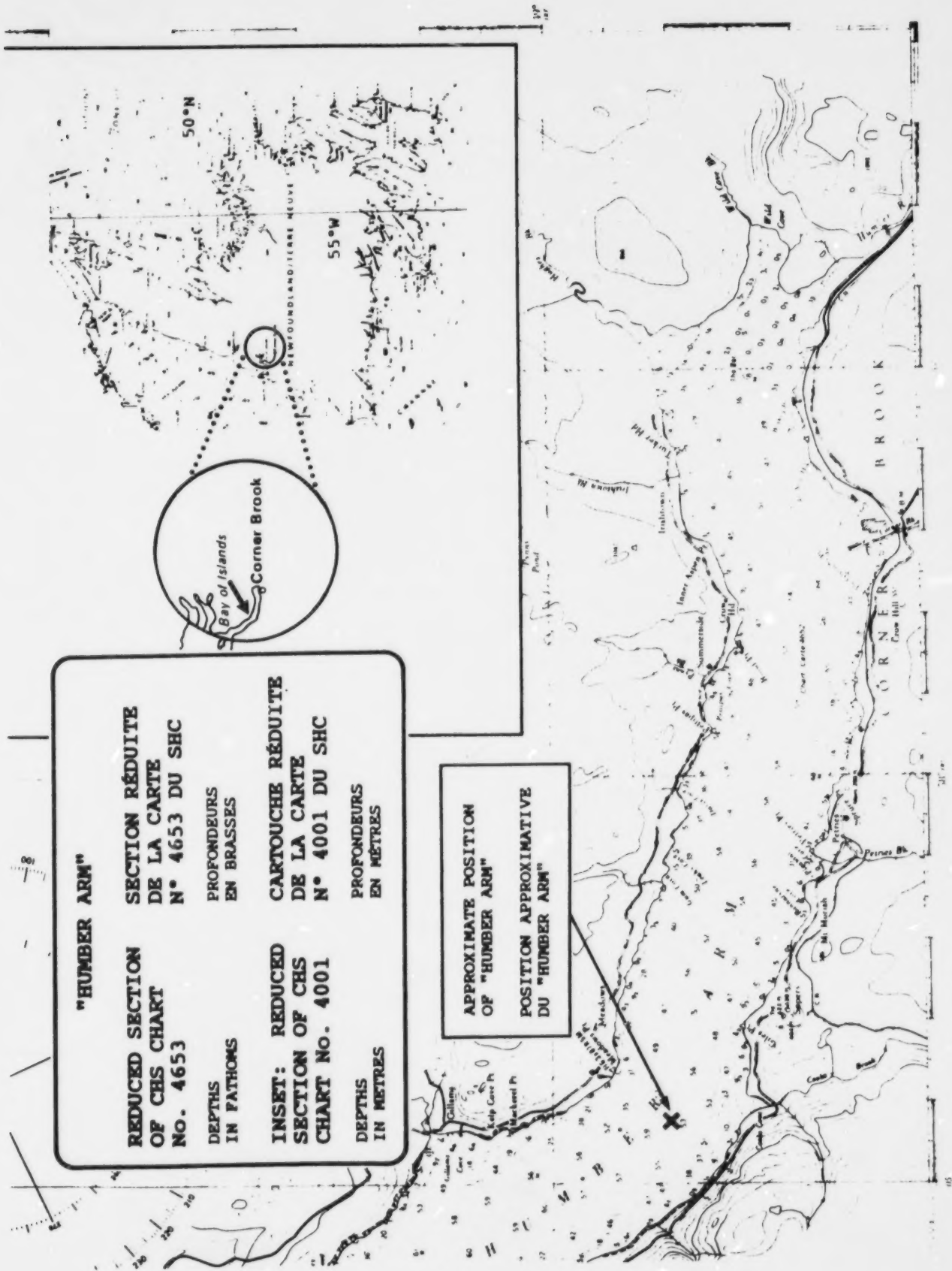
The loss of life of the motorman aboard the "HUMBER ARM" was caused by his misfortune of being in that area when the sudden explosion of the exhaust gas thermal oil heating boiler occurred in the engine-room. It would appear that the following sequence of events led to the explosion:

- the main engine overheated due to various heat exchanges being blocked by mud, etc;
- attempts to restart the main engine on heavy fuel probably caused some incomplete combustion;
- unburnt heavy fuel oil vapours accumulated in the main engine exhaust uptakes;
- the vapour was ignited by heated carbon particles from the misfiring of the main engine; and
- because of their construction and method of securing the boiler steel covers could not tolerate the pressure from the explosion.

Findings

Search and Rescue activities had to be undertaken under extremely difficult weather conditions.

The action of the RCMP helicopter pilot is considered commendable, above and beyond the call of duty.



"HUMBER ARM"

REDUCED SECTION
OF CHS CHART
NO. 4653

DEPTHS
IN FATHOMS

SECTION RÉDUITE
DE LA CARTE
N° 4653 DU SHC

PROFONDEURS
EN BRASSES

INSET: REDUCED
SECTION OF CHS
CHART NO. 4001

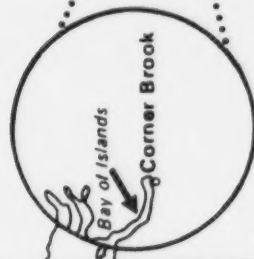
DEPTHS
IN METRES

CARTOUCHE RÉDUITE
DE LA CARTE
N° 4001 DU SHC

PROFONDEURS
EN MÈTRES

APPROXIMATE POSITION
OF "HUMBER ARM"

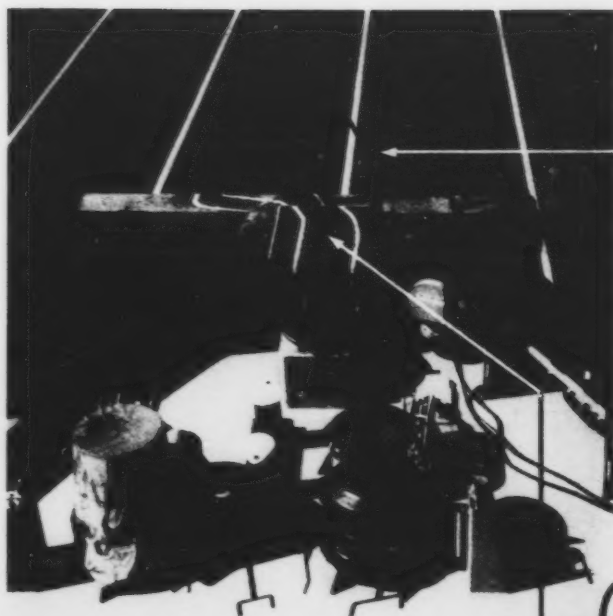
POSITION APPROXIMATIVE
DU "HUMBER ARM"





Boarding arrangement before casualty.

Installations de l'embarquement avant l'accident.



Improvements made to boarding arrangement after casualty.

Améliorations apportées à l'installation d'embarquement après l'accident.

Handrail

Rambarde

Platform

Plate-forme



"ARCTIC TAGLU" with "LINK 100"
L'"ARCTIC TAGLU" avec le "LINK 100"

"ARCTIC TAGLU"

Crew member lost overboard off Vancouver, B.C.
July 4, 1988.

Summary

The "ARCTIC TAGLU" is a tug of 394 gross tons built in Vancouver in 1976 and registered in Edmonton, Alta. She was built for Arctic operations and can be used as a push-tug, being constructed with a flat bow. The "LINK 100" was converted in June, 1988 from a self-propelled ferry to a barge suitable for the carriage of truck trailers. She is of 2,255 gross tons. Her propulsion power was replaced by two bow thrusters, controlled from the tug, and a notch was built at the stern within which the forepart of the "ARCTIC TAGLU" fitted when the two operated as an integrated unit. The two vessels were prepared for a new marine service transporting truck trailers from Vancouver to Swartz Bay on Vancouver Island. On July 4, 1988, at 2320, the unit pulled out from the CPR slip in Vancouver Harbour on the inaugural voyage to Swartz Bay; a cargo of trailers estimated at 420 t was on board the "LINK 100" and the "ARCTIC TAGLU" was pushing in the notch. It was a clear night with a light breeze from the SE, the sea was calm, the air temperature 11°C and the sea temperature 14°C.

After departure and with the tug westbound in the First Narrows, the master shut off the bow thruster engines but the starboard unit remained idling. Although the idling thruster engine did not affect the navigation of the vessel, the owner's principal, who was on board for the voyage, consulted with the chief engineer and decided to cross over to the barge and check the engine as soon as the tug reached a position about a mile west of the First Narrows bridge.

As the two proceeded forward to cross over to the barge, each with flashlight in hand, the owner, who was leading, had to retrace a few steps to round a capstan because of the arrangement of the disconnected shore power cables. On reach the designated cross-over location, at the bow on the centre-line, the owner turned to find that the chief engineer was climbing over the starboard bulwark at a fairlead, the point where the crew had been in the habit of crossing to the barge during the preceding weeks while the conversion work was being carried out. On hearing the owner's shouted warning to the chief engineer, the master who was in the wheel-house switched on the deck floodlights in time to see the chief engineer drop outboard of the bulwarks as if to land on the barge.

The owner hurried aft on the barge but only saw, in the beam of his flashlight, the chief engineer surfacing briefly in the turbulent water between the tug and the barge. Meanwhile the

master put the main engines in neutral and a lifebuoy with a light was thrown over the side as a marker.

The master sent a 'Mayday' via VTS while two crew members launched an inflatable boat to commence a search and the master then brought the unit about using the bow thrusters. However, despite an extensive search, involving the police, a private tug and a Coast Guard cutter and hovercraft, no trace of the missing chief engineer, was found.

Findings

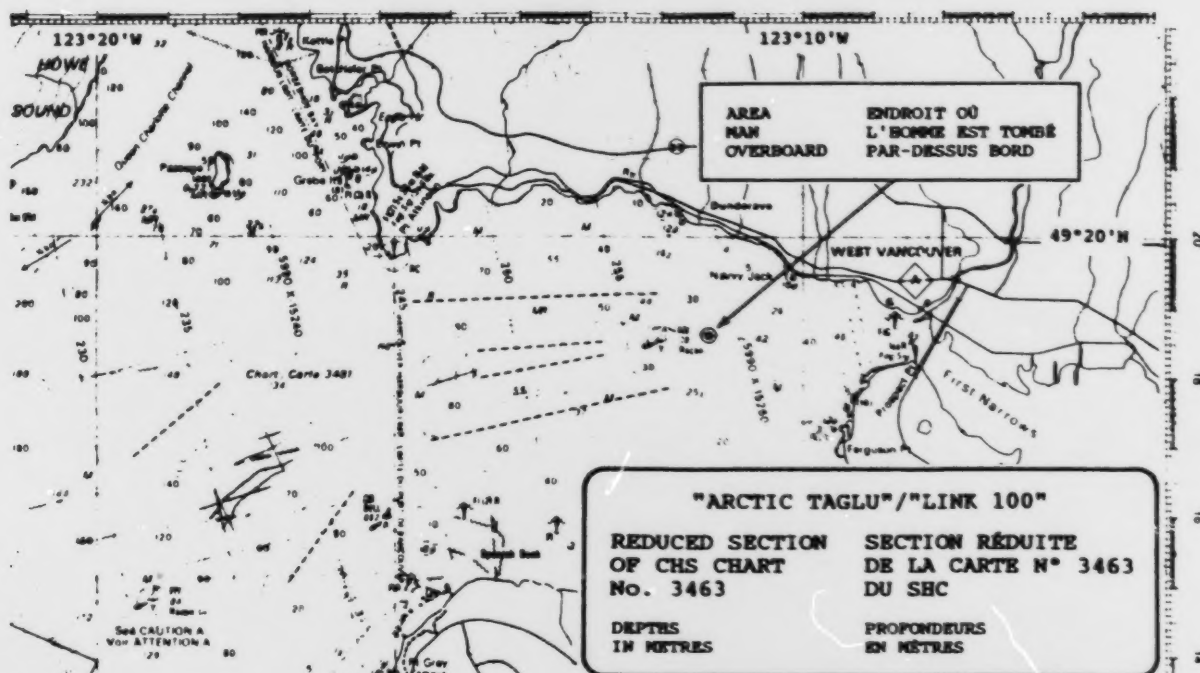
Shortly before midnight on July 4, 1988, the tug "ARCTIC TAGLU" pushing the barge "LINK 100" was outbound from Vancouver harbour when the chief engineer, who was crossing from the tug to the barge, fell between the tug and the barge and disappeared.

It would appear that the following factors contributed to this accident:

- there was a failure of the bow thruster control system on the barge, and it was decided to investigate the problem;
- the accident occurred during the hours of darkness and there was no illumination at the tug/barge crossover area;
- the barge was in a loaded condition on her inaugural voyage and therefore had a much deeper draught than previously encountered by the deceased;
- the chief engineer attempted to cross over to the barge in an inappropriate manner at an inappropriate place; and
- the chief engineer was carrying a flashlight in one hand and some rags in the other when he attempted to board the barge.

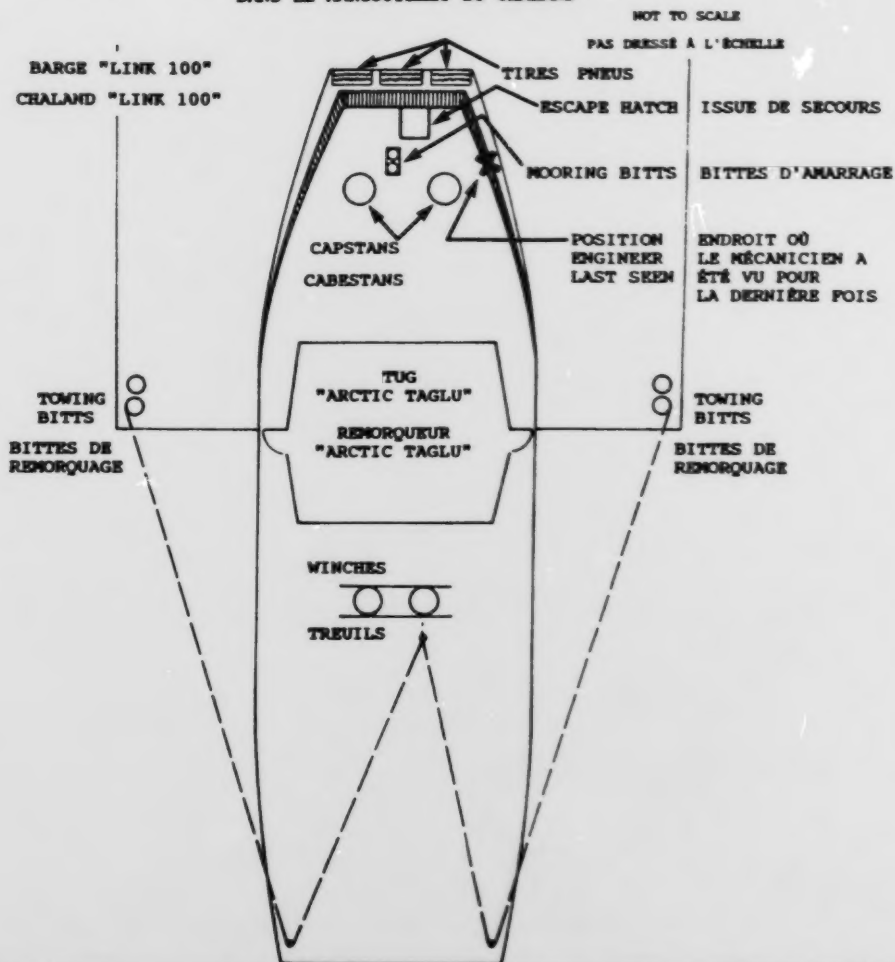
It would appear that the following contributed to the loss of the crew member.

- the chief engineer was not wearing any form of flotation device.



APPROXIMATE ARRANGEMENT OF TUG IN NOTCH OF BARGE

PLAN D'ENSEMBLE APPROXIMATIF DU REMORQUEUR DANS LE MARGOUILLET DU CHALAND



"TACHIBANA"



Likely area
victim lost
overboard

Endroit probable
où la victime est
tombée à la mer

Galley
doorway

Porte de la
cuisine



"TACHIBANA"

**Loss overboard of a crew member, off Roberts Bank,
British Columbia, November 23, 1988.**

Summary

The Panamanian registered tanker, "TACHIBANA", is a single screw vessel of 4,626 gross tons, which was built in Japan and delivered in February 1988. The accommodation, bridge and engine-room are located aft, the vessel is equipped with direct propulsion controls and she has a service speed of 12.6 knots. The unlicensed crew accommodation is on the main deck level, with the small single berth cabins, forward and on each side, separated from the engine-room space in the centre by a 'U' shaped alley-way. The galley is aft of the engine-room with messrooms adjacent, to port and starboard. The galley also has a doorway aft, leading out to the open poop deck. The saloon steward's cabin is located on the starboard side adjacent to the messroom.

The "TACHIBANA" departed Japan November 6, 1988, bound for Vancouver with a crew of 21 on board. On November 10 whilst at sea, the saloon steward, Myong Pyo Hong received word that his father had passed away. He was deeply grieved but did not request to be sent home.

The crew were of Korean nationality and had joined the newly-built vessel during the month of February, 1988, signing a one-year contract with the shipping company. Most of the original crew, including Mr. Hong, were, therefore, still on board in November, 1988.

The "TACHIBANA" arrived in Vancouver at 0805, November 22, where she loaded 5,250 tonnes of caustic soda. Loading commenced at 0905 and was completed at 1850; she departed Vancouver at 2226. During the vessel's stay in port off-duty crew members took advantage of the short stay to have some shore leave. Mr. Hong reportedly went ashore during his free hours in the afternoon during which time he drank some beer and returned on board in time to carry out his duties. Later that same evening he assisted in taking stores and he served coffee to the master and pilot prior to sailing.

At about 2315 Mr. Hong entered the radio operator's cabin. He reportedly had been drinking, was incoherent and had grabbed the radio operator by the neck leaving bruise marks; he was assisted below to his quarters. Mr. Hong was later seen in the galley at approximately 0115, November 23, dressed only in light pants, a T shirt and slip-on sandals, at which time he appeared to be sober and under no stress.

Some minutes later his sandals were found near the poop deck entrance to the galley and at 0130 the master was informed that the saloon steward was missing. The vessel was then off Roberts Bank and was rolling slightly in moderate to rough southerly seas with the visibility reduced in heavy rain.

The Canadian Coast Guard was informed immediately and the Rescue Coordination Centre in Victoria (RCC) directed a large scale search to no avail. The "TACHIBANA" returned to English Bay anchorage, Vancouver to assist the RCMP in their investigation into the incident. At the time of writing this report Mr. Hong remains missing and is presumed drowned.

Findings

On the early morning of November 23, 1988 whilst the Panamanian chemical tanker "TACHIBANA" was proceeding southbound along the Strait of Georgia in darkness and in moderate/rough sea conditions, the saloon steward Myong Pyo Hong was lost overboard.

In the absence of any witnesses the precise cause of his fall overboard is not known.

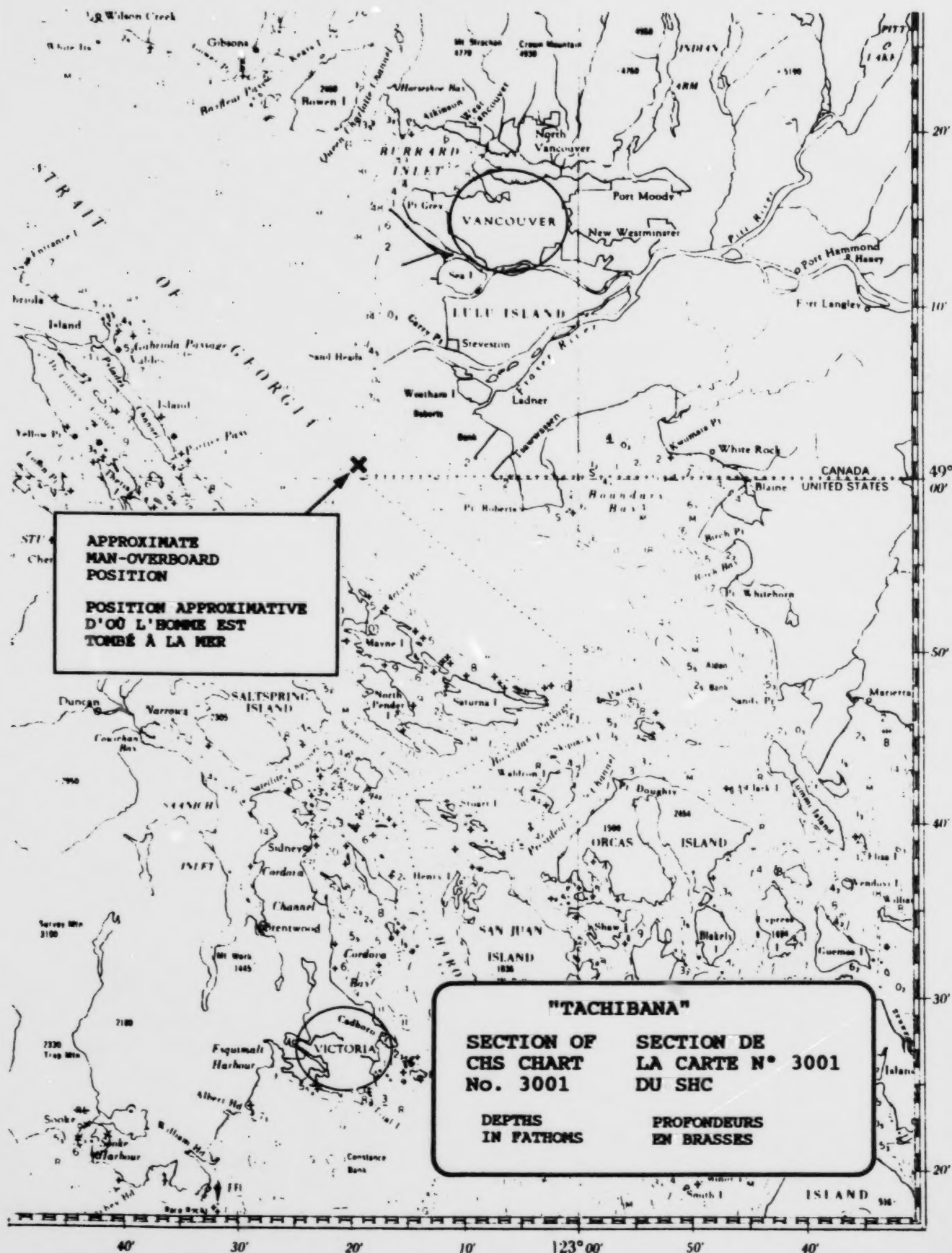
Mr. Hong was reportedly deeply grieved over the recent death of his father however, there is no concrete evidence to prove he was in a depressed state of mind.

A note and letter of resignation, both hastily written, incomplete, unsigned and undated, were found in Mr. Hong's cabin.

Mr. Hong had consumed alcohol during the afternoon of November 22 however, since no autopsy or other medical evidence is available and since there is conflicting testimony as to his state of sobriety on the evening of November 22 until early morning November 23, the extent to which alcohol may have been a contributing factor cannot be ascertained.

It would appear that having fallen overboard, Mr. Hong lost his life due to the following contributing factors:

- there was a lapse of approximately ten minutes before the victim was reported missing;
- sea conditions and darkness hindered the search, and
- the cold water, lack of a flotation device and scanty clothing limited his survival time.



"BACALAC TRANSPORT"



General view of vessel
Vue du navire



Wheel-house showing deckhouse top with shipside railing
Vue de la timonerie montrant le haut du rouf
avec la rambarde sur le côté du navire

"BACALAC TRANSPORT"

Crewmember lost overboard, Bonavista Bay, Nfld., July 7, 1988

Summary

The "BACALAC TRANSPORT" is a 200 gross ton, steel hulled general cargo vessel with one hatch, built in 1966 and registered in St. John's Newfoundland. She is employed between the Island of Newfoundland and the Labrador and Quebec coasts in the salt fish trade.

On the morning of July 7, 1988, the "BACALAC TRANSPORT" departed Seldom Come By, Fogo Island, with her crew of five, bound for Port Union, Newfoundland.

The crew changed watch at noon when the engineer and mate assumed their duties, relieving the master and assistant engineer until 1800. After coming on watch the engineer made two trips to the wheel-house for a brief visit, one at 1330 and one at 1400. On his last visit he had a brief conversation with the mate in which he inquired about the estimated time of arrival at Port Union and left the wheel-house at approximately 1405. Shortly afterwards the crew heard the engine room door shut and it was assumed that the engineer had entered the engine-room.

The assistant engineer went to the wheel-house at 1640 and while there, the mate asked him to look for the engineer because he had not seen him in the wheel-house for about two hours. After searching for the engineer, he reported to the mate that there was no sign of him on board the vessel. The master was notified immediately and a full search was carried out by the crew without success. A course alteration was made at 1710, reversing the track of the vessel to search for the missing engineer.

It was daylight and the weather conditions were clear, with good visibility, up to 15 miles, a light ENE wind and a calm sea with a low ocean swell; the air temperature was 14°C and the surface water temperature was 8°-9°C.

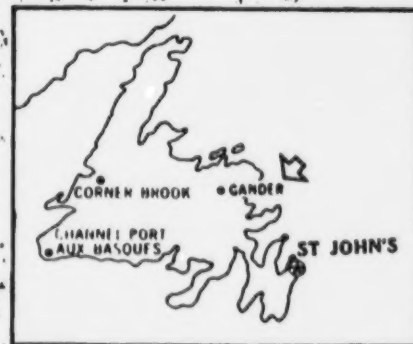
The master advised the owner, who in turn notified Search and Rescue of the mishap and a search was conducted by the CCGS "SIR WILFRED GRENFELL" and the Department of Fisheries and Oceans vessel "MAXWELL", together with a fixed wing aircraft. The search continued until July 8, 1988, with no sighting of the missing engineer and the case was handed over to the RCMP detachment in Bonavista, Newfoundland.

Findings

During the daylight hours of the afternoon of July 7, 1988, and during fine weather conditions, the certificated engineer on watch disappeared overboard from the small coastal vessel "BACALAC TRANSPORT" in the area of Bonavista Bay while enroute to Port Union. In the absence of any eye witnesses, it is not possible to determine the precise cause of his disappearance.

It would appear that, having gone overboard, his chances of survival would have been slim due to the following contributing factors:

- the noise emanating from the funnel exhausts may have prevented any calls for help from being heard;
- there was a lapse of up to three hours before the engineer was discovered missing, and
- the cold water temperature limited his survival time particularly as he was wearing light clothing.



"BACALAC TRANSPORT"

REDUCED SECTION OF CHS CHART No. 4017	SECTION RÉDUITE DE LA CARTE N° 4017 DU SHC
DEPTHS IN FATHOMS	PROFONDEURS EN BRASSES

Subsidence and overhead cables may conduct high-voltage and contact with or proximity to these points on extreme danger. Mariners should use extreme care in this area. It is not to be taken as a guide to the cable's position, depth or the rate of pull down of it. Submarine cables are not to be used for anchoring. Actual depths may differ from charted values due to changes in atmospheric conditions and in water levels.

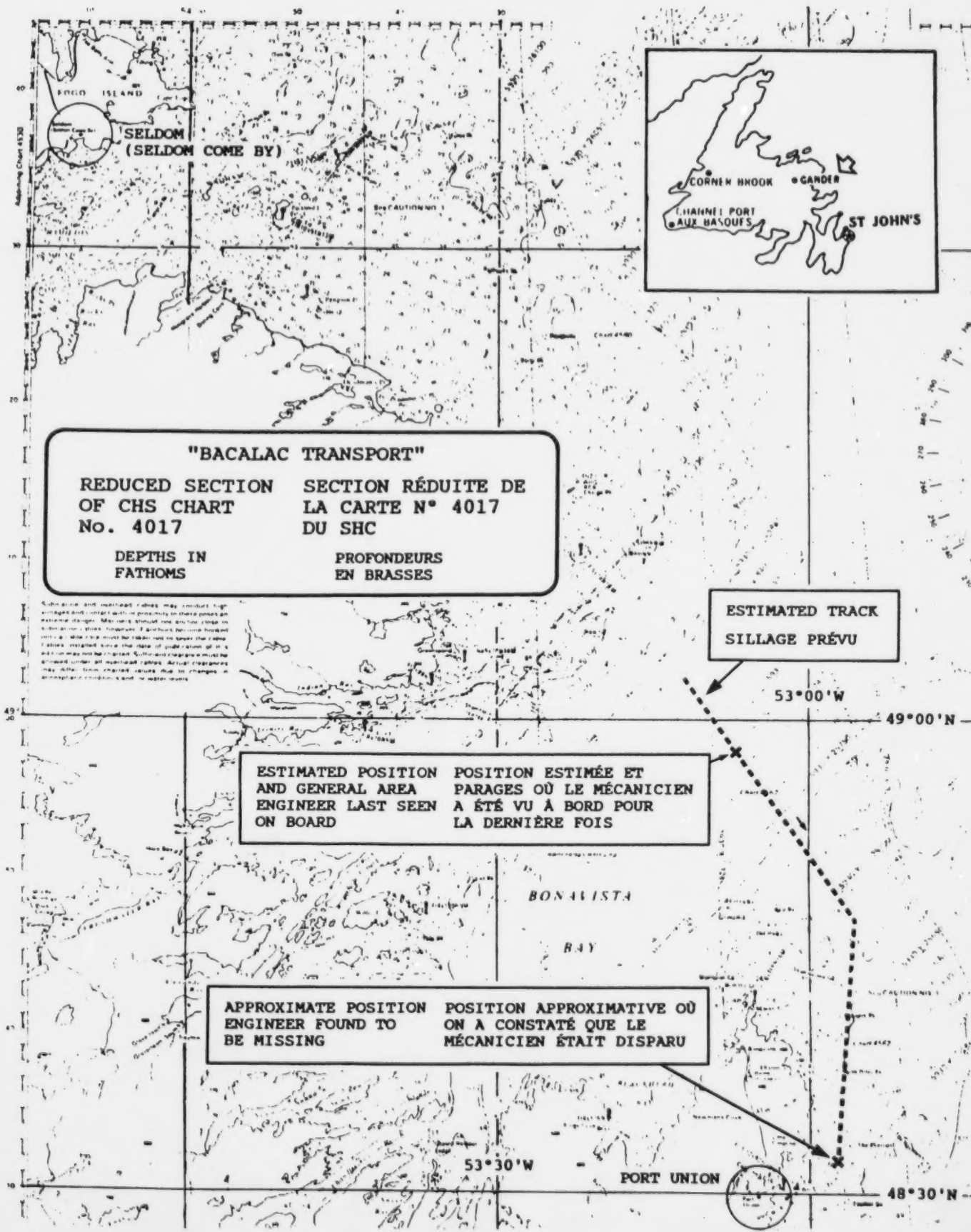
**ESTIMATED TRACK
SILLAGE PRÉVU**

**ESTIMATED POSITION
AND GENERAL AREA
ENGINEER LAST SEEN
ON BOARD**

**POSITION ESTIMÉE ET
PARAGES OÙ LE MÉCANICIEN
A ÉTÉ VU À BORD POUR
LA DERNIÈRE FOIS**

**APPROXIMATE POSITION
ENGINEER FOUND TO
BE MISSING**

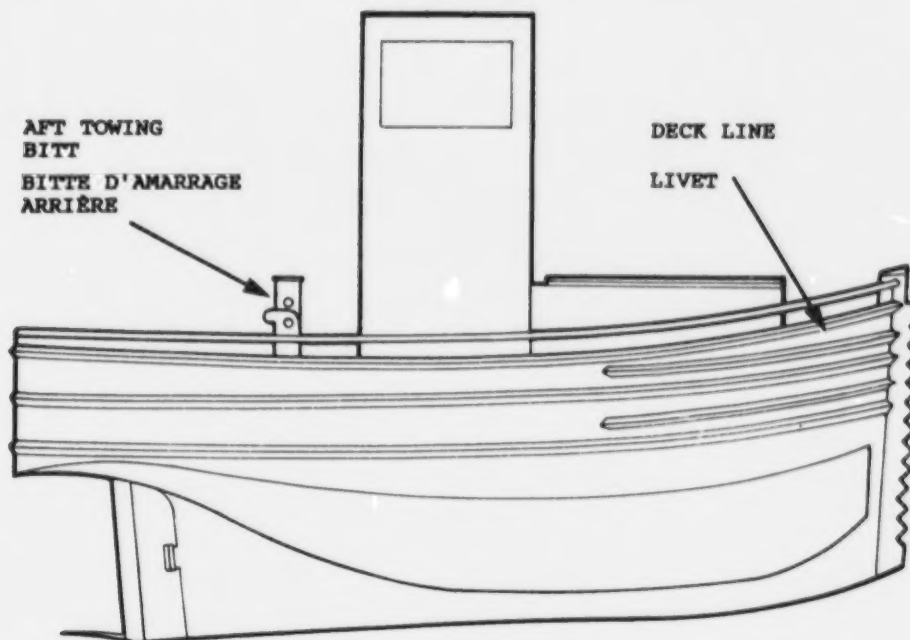
**POSITION APPROXIMATIVE OÙ
ON A CONSTATÉ QUE LE
MÉCANICIEN ÉTAIT DISPARU**



"CHARLIE MIKE"

'DOZER'
BOOM TUG

REMORQUER
DE BASSIN



General Arrangement
Plan d'ensemble



Similar 'Dozer' secured at float,
showing machinery shack in background.

Remorqueur de bassin similaire
amarré au panton, et montrant la
cabine de machinerie à l'arrière.

"CHARLIE MIKE"

**Sinking with loss of operator, Khutzeymateen
Inlet, B.C., June 16, 1988.**

Summary

The "CHARLIE MIKE" was a small, flush-deck vessel, commonly referred to as a 'dozer boat', specially designed for log yarding work in sheltered waters. She was powered by a single 97 kW diesel engine and equipped with hydraulic steering gear and a VHF radiotelephone. Forward of the small deck cabin sheltering the wheel and the engine controls was a small trunk with a hatch over the engine.

On June 16, 1988, the "CHARLIE MIKE" was working at a logging camp situated on the south bank of Khutzeymateen Inlet, B.C., some 15 miles from Portland Inlet. The camp consisted of a houseboat that provided living accommodation for the crew, and an 'A' frame on a floating rig containing the necessary machinery, diesel generators, diesel winches and work shop. A tug, two dozer boats and two power skiffs, were also part of the camp equipment.

The floating 'A' frame was moored at the foot of the logging site and was essentially used for dragging felled and dressed tree trunks down the steep slope and into the water where they were assembled in booms. As the felling of trees progresses up the slope, the tree trunks are dragged down and into the water by means of a wire cable passing through a block at the top of the 'A' frame rig and onto a power winch on the float. To the outer end of this main cable is shackled the haul-back wire cable, which runs through lead blocks at the top of the slope and back via the 'A' frame, to the drum of a second winch. This arrangement allows control over the logs and easy re-positioning of the gear.

At 1600, June 16, 1988, after a trial run of the log hauling rig it was found necessary to clear the turns out of the haul-back cable. It was a routine task and, in order to stretch the wire, the end was secured with a length of polypropylene rope to the bitt on the dozer boat "CHARLIE MIKE" and towed off by the boat until the cable was almost completely clear of the winch. It was proposed that the cable was to be held taut by the dozer boat as it was respoiled carefully on to the drum. The weather conditions were good, the water was calm and there was no wind; air temperature was 14°C and the water temperature was 10°C.

On this occasion, the cable was stretched eastwards parallel to, and at a distance of some 50 metres from, the shore line. When the cable had been let out some 300 metres

and the winchman was respooling it, the cable was again slacked off briefly in order to clear it. At that time two of the loggers glanced in the direction of the "CHARLIE MIKE" and noticed that she had disappeared leaving a puff of steam and air bubbles in the area where she was last sighted; the time was 1700.

A motor skiff was quickly taken out to the scene only to find a floating pike pole and a hard hat but no trace of the operator. A 'Mayday' was sent from the VHF radiotelephone on board the tug and the search continued until dark being resumed on a limited scale the next day. The CCGC "POINT HENRY" and her FRB together with the FPV "CUTTER ROCK" and a Coast Guard Auxiliary vessel assisted with the search. Subsequent attempts to raise the vessel, which was uninsured and valued at approximately \$3,000 were made using the large tug but these proved unsuccessful as the polypropylene rope parted and the "CHARLIE MIKE" reported sank into deeper water; any further attempt to salvage her was abandoned. The body of the operator was not recovered and he is listed as missing and presumed drowned.

Findings

There were no witnesses to the actual sinking of the small dozer boat "CHARLIE MIKE" with her operator off shore at the Palmerville logging camp at Khutzeymateen Inlet in Northern B.C., on June 16, 1988. However, it would appear that the following factors may have contributed to this casualty:

- the vessel became girded and sank when the operator reached the end of the tow-out of the cable, the winchman slacked the cable briefly and the weight of the cable in trajectory hauled the vessel back.

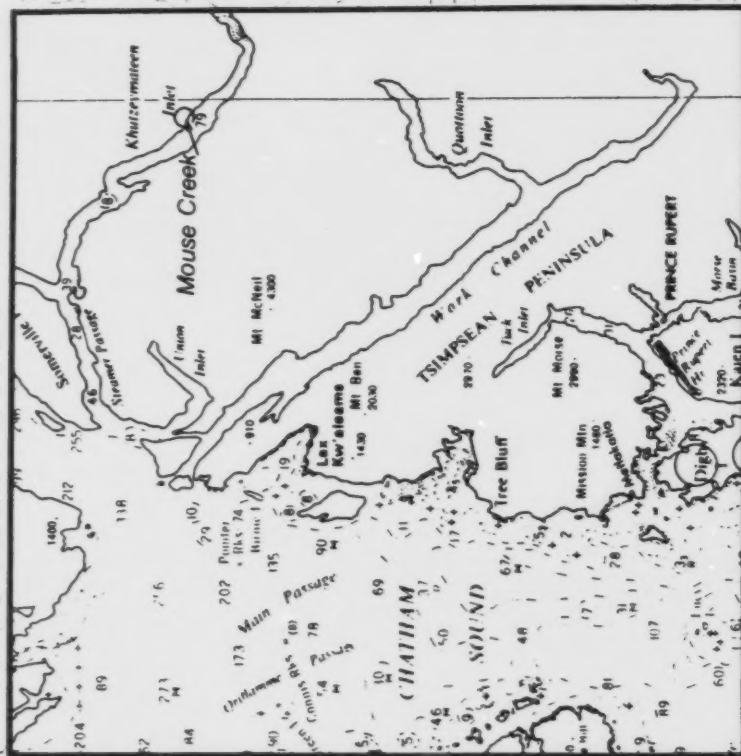
Other Findings

The "CHARLIE MIKE" did not carry a gob rope or anti-girding line nor was she fitted with any type of equipment to prevent girding.

The operator, Robin Fillion was not wearing a life-jacket.

There was a larger and more suitable vessel available for this task.

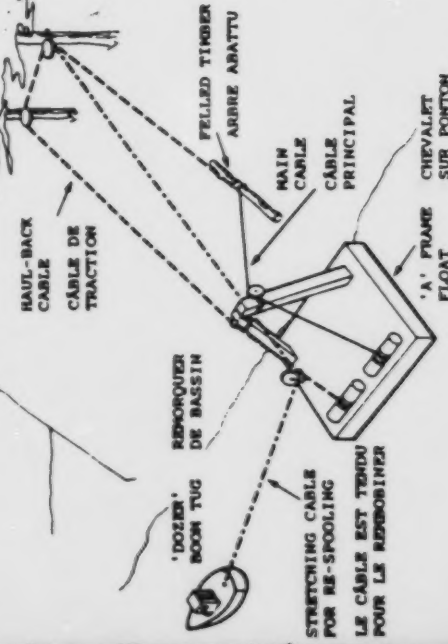
KHUTZYMATEEN INLET



"CHARLIE MIKE"
SECTION OF
CHS CHART
No. 3994
INSET FROM
CHS CHART
No. 3002
DEPTHS IN
FATHOMS
SECTION DE
LA CARTE N° 3994
DU SHC
CARTOUCHE DE
LA CARTE N° 3002
DU SHC
PROFONDEURS
BRASSES

"CHARLIE MIKE"
SANK
"CHARLIE MIKE"
COULÉ

LOGGING
CAMP
CAMP DE
BOCHERON

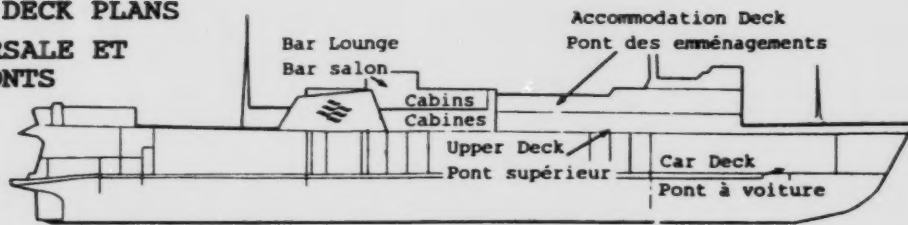


REPRESENTATION
OF OPERATION
REPRÉSENTATION
DES OPERATIONS

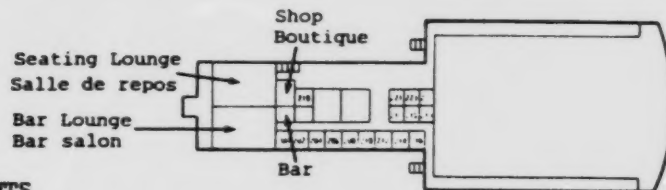
- 24 -
"SIR ROBERT BOND"

PROFILE AND DECK PLANS

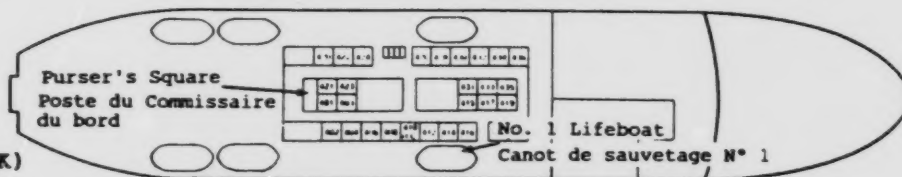
VUE TRANSVERSALE ET
PLANS DES PONTS



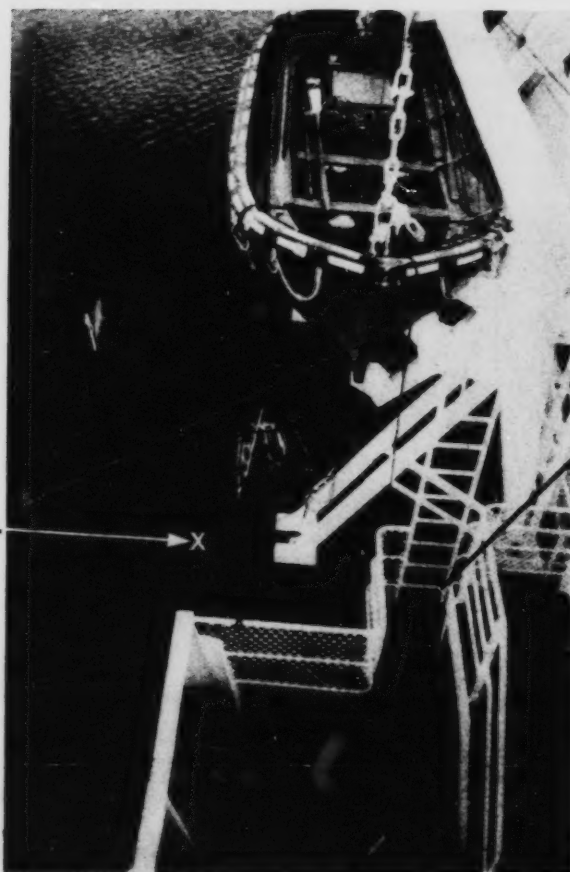
ACCOMMODATION DECK
PONT DES EMMÉNAGEMENTS



UPPER DECK
(EMBARKATION DECK)
PONT SUPÉRIEUR
(PONT D'EMBARQUEMENT)



Position
from which
passenger fell
Endroit d'où
le passager
est tombé



Position of
other passenger
Position de
l'autre passager

Position of
crew-members
Position des autres
membres d'équipage

"SIR ROBERT BOND"

**Passenger lost overboard, Notre Dame Bay, Nfld.,
July 29, 1988.**

Summary

The passenger, Ro-Ro ferry "SIR ROBERT BOND", of 11,198 gross tons, built in Port Weller, Ont., in 1975 and registered in St. John's, Nfld., is employed on a regular seasonal service between Lewisporte, Newfoundland and Goose Bay, Labrador with occasional calls at Cartwright. At 2218, July 28, 1988, the vessel sailed from Lewisporte bound for Labrador carrying general cargo, automobiles, 208 passengers and her crew of 49.

At approximately 0105, July 29, in a position about 18 miles ESE of Gull Island, off Cape St. John, a passenger was observed to fall overboard from the starboard side of the embarkation deck by No. 1 lifeboat. At this time weather conditions were fair with winds from the south-west at approximately 15 knots. Visibility ranged between 1 and 5 miles in a light drizzle and sea and swell conditions were slight. The air temperature was 18°C and the sea temperature 11°C. The "SIR ROBERT BOND" was proceeding on a course of 357°T at a speed of 15 knots.

Earlier the previous day and evening, the passenger concerned had been observed to have consumed a moderate to heavy amount of alcoholic beverages, both ashore in Lewisporte and on board the vessel after boarding. Some drinking by passengers was reported outside of authorized areas on the vessel, contrary to the owner's Fleet Orders.

Sometime after midnight on July 28, this passenger and another passenger, both of whom had been drinking together and both of whom were reported to have consumed a considerable quantity of alcohol, left the accommodation and went out on deck. Upon reaching the area of No. 1 lifeboat on the embarkation deck, the first passenger climbed over the guard railing and commenced walking on the upper edge of the ship's superstructure shell plating.

Attempts by the other passenger and, latterly, some crew members to persuade the first passenger to come back inside the rail were not acknowledged or heeded and the passenger eventually lost his balance and fell overboard.

The bridge was notified and the OOW stopped the vessel, called the master and switched on the searchlights. Comfort Cove CGRS was advised of the situation and the "SIR ROBERT BOND" began a search for the missing passenger. Four other vessels joined in the search and the following morning for two hours a SAR helicopter was on the scene. The "SIR ROBERT BOND" was released

to continue her voyage at 1005, July 29, but the search continued throughout the day until late in the evening, at 2200, but no sign of the missing person was found.

Findings

A passenger fell overboard from the ferry "SIR ROBERT BOND" at 0105, July 29, 1988, in Notre Dame Bay, Newfoundland, due to his own imprudent actions whilst the vessel was enroute from Lewisporte, Newfoundland, to Cartwright, Labrador.

It would appear that:

- alcohol had been consumed, and
- the person elected to climb over the safety railings and attempted to walk along the vertical coaming edge of the ship's superstructure side plating.

Other Findings

No flotation devices, particularly lifebuoys with attached lights, were thrown over the side immediately after the man fell overboard.

Reportedly alcoholic beverages were consumed on board by passengers, outside of the bar/lounge area. This is difficult, if not almost impossible, for ship's staff to control. This factor may have significantly increased the degree of intoxication of the passengers involved in this accident.

50°00'N

55°00'W



APPROXIMATE
MAN OVERBOARD
POSITION

POSITION APPROXIMATIVE
OÙ L'HOMME EST
TOMBÉ À LA MER

N O T R E D A M E B A Y

49°40'N

49°20'N



"SIR ROBERT BOND"

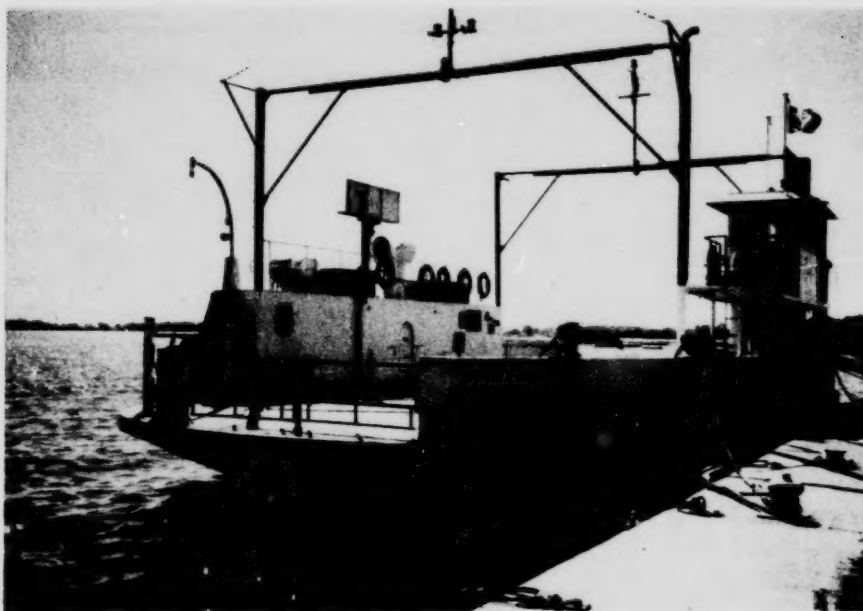
REDUCED SECTION
OF CHS CHART
No. 4520

SECTION RÉDUITE DE
LA CARTE N° 4520
DU SHC

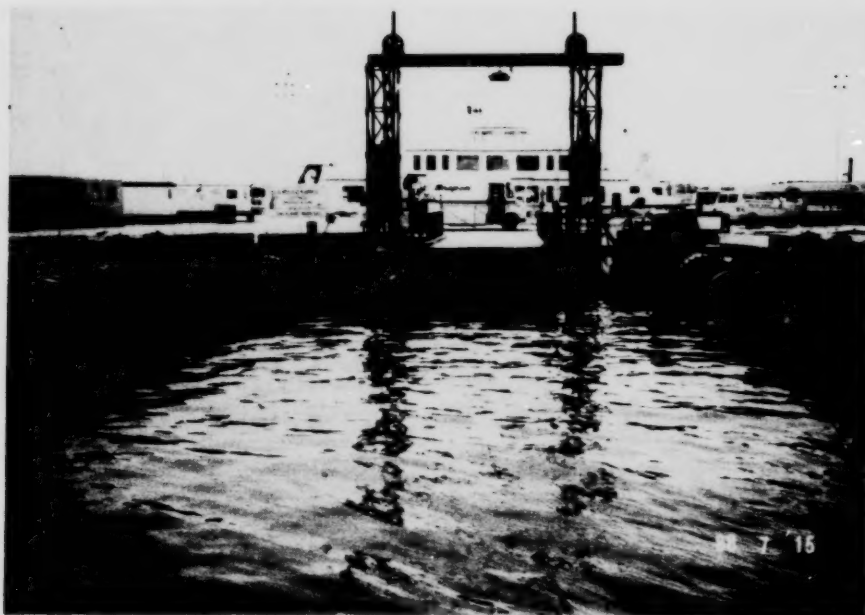
DEPTHS IN
FATHOMS

PROFONDEURS
EN BRASSES

"WINDMILL POINT"



General view of vessel.
Plan d'ensemble du navire.



Toronto Island airport terminal.
Terminus de l'aéroport de l'île de Toronto.

"WINDMILL POINT"

**Struck landing heavily - passenger injuries,
Toronto Island, Ont., July 14, 1988.**

Summary

The "WINDMILL POINT" is a double-ended, vehicle/passenger ferry operating between a terminal at Toronto Island airport and a terminal in the city; she is of 118 gross tons, was built in Kingston, Ont., in 1954, and is registered in Toronto. Her main propulsion consists of a 164 kW diesel engine connected, through power clutches, to the main shafting which drives uni-directional propellers at each end. The vessel's direction of travel and reverse propulsion are selected by clutching in the appropriate propeller. Operation of the clutches is by means of an electrical control unit which permits both clutch and throttle to be regulated from the wheel-house. There is an electrical back-up system with push button controls for the clutches also operable from the wheel-house. Should both power systems fail, the clutches can be operated manually in the engine-room.

On her second trip of the morning, July 14, 1988, the "WINDMILL POINT" was running with the clutches being operated manually in the engine-room after a problem with the controls during the first trip. The weather was fine and clear, there was no wind and the water surface was calm as the vessel left at 0645 on the 170 m crossing to the Toronto Island terminal. She was carrying 4 vehicles and approximately 70 passengers. A system of signals from the wheel-house had been devised which would sound on the buzzer in the engine-room to indicate the clutching action required when manoeuvring the ferry.

On the approach to the Toronto Island terminal landing the signal for reverse thrust was reportedly transmitted from the bridge to the engine-room but neither of the crew members in the engine-room heard it although they were anticipating this signal. Consequently, the vessel maintained her forward headway and struck the landing directly with considerable force, causing several passengers to lose their footing. No apparent damage was caused to the vessel and impact fenders beneath the ramp absorbed the force of the striking. Injuries were reported by eight persons, three of them received hospital treatment while the others were treated on-scene by Crash Fire Rescue personnel from Toronto Island Airport.

Findings

On July 14, 1988, the vehicle/passenger ferry "WINDMILL

POINT" was in service with the main engine clutch mechanisms being operated manually in the engine-room because of a previous failure of the electrical controls. As she approached the Toronto Island Terminal, she struck the landing heavily when the reverse clutch was mistakenly not engaged. There was no noticeable damage to the vessel or facility but eight persons received injuries with varying degrees of seriousness.

It would appear that the following factors contributed to this casualty:

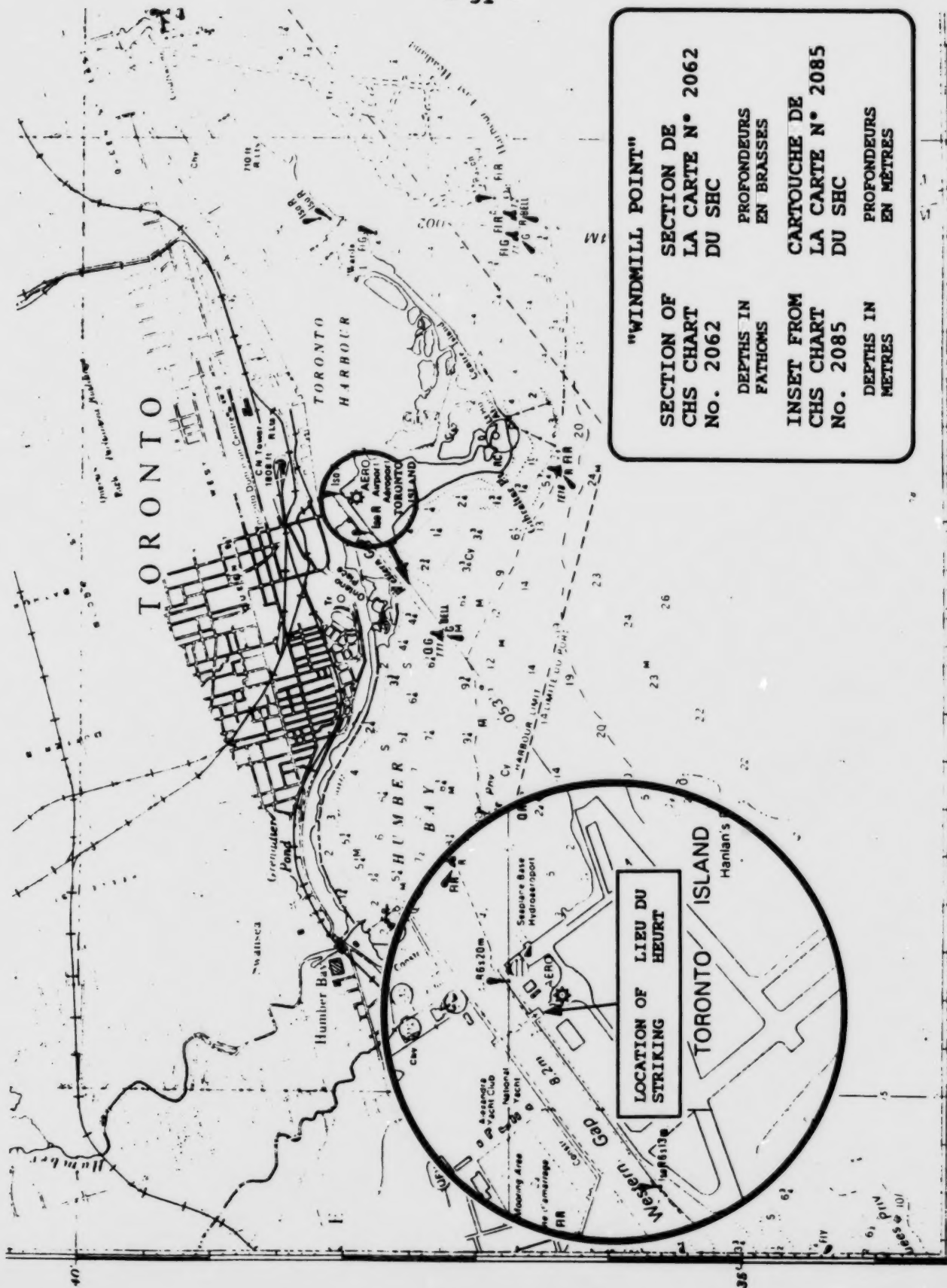
- an agreed buzzer signal from the wheel-house requesting that the reverse clutch be engaged was not heard in the engine-room;
- the siting of the buzzer and the ambient noise in the engine-room made it difficult to hear the buzzer;
- there was no means for the engine-room to confirm execution of orders from the wheel-house;
- believing that the reverse clutch had been engaged, the main engine speed was increased from the wheel-house, and
- to make an emergency repeat order from the wheel-house to engage the reverse clutch was not feasible because the button to operate the buzzer was not readily accessible from the con position in use.

Other Findings

Some of the extensive internal damage to the Panish electrical control unit appeared to have occurred some time prior to the failure of the unit.

No warning was given to the passengers advising them of the impending heavy impact.

The fact that there was more than the usual number of passengers aboard, thereby grouped closer together, may have prevented injuries to a greater number of passengers.



"BUOY TENDER"/"B.I.1"



"BUOY TENDER" before registered name was painted on.
"BUOY TENDER" avant que le nom d'immatriculation soit peint.



View across "B.I.1" showing flaps fitted since casualty.
Vue transversale du "B.I.1" montrant les rabats installés
depuis l'accident.

"BUOY TENDER"/"B I 1"

**Truck lost overboard, Amherstburg, Ont.,
June 17, 1988.**

Summary

The "BUOY TENDER" is registered in Amherstburg, Ont. as a tug of 13.61 gross tons; she was built in Erieau, Ont., in 1957. The "B I 1" is a flat-deck barge, some 18 m x 6 m; she was built in Sarnia, Ont., in 1986 and is not registered.

The two vessels operate as a unit, with the barge secured alongside the tug, running as a ferry between Amherstburg and Bois Blanc Island. This island, popularly known as Bob-Lo Island, is primarily a large amusement park and the ferry transports service vehicles and their drivers on demand. She operates with a crew of two, a skipper and a deck-hand.

At approximately 1030, June 17, 1988, the unit was departing Amherstburg with three vehicles on board, all three drivers having remained in their vehicles. The weather was fine and clear with a light variable wind. As the barge swung and gathered headway, a pick-up truck, parked on the port side forward, moved ahead and over the forward end, into the water.

The driver climbed free of the truck before it sank and stood on top of the roof as one of the other unit drivers threw a line towards him. He jumped off the cab and swam to the rope and was hauled on to the barge by the two other drivers and the deckhand. He was then transported to Bob-Lo Island to the company's first-aid centre but he refused any treatment and resumed his employment, being apparently uninjured.

The pick-up truck sank beneath the surface of the water but presented no navigational obstruction other than to craft operating out of the main channel. It was salvaged the following day and found to have sustained considerable damage.

Findings

A pick-up truck, belonging to Boblo Island Park Services, was lost overboard from the vehicle barge "B I 1" in tow of the tug "BUOY TENDER" during departure manoeuvres from Amherstburg, Ontario. The driver escaped unhurt and the vehicle was later salvaged.

to this casualty.

- upon examination of the vehicle controls, the gear lever was in reverse, the ignition turned off, and the emergency brake was off, thus the vehicle was in neutral and unrestrained;
- the vehicle moved because of the forward movement of the craft;
- the driver was not monitoring the status of his vehicle and was not aware of forward movement of it until the front of the vehicle went over the end of the barge;
- there was no facility of restraint for vehicles, fitted to or aboard the barge, and
- the skipper and the deckhand, engaged in their respective departure duties at the time, did not see the vehicle in motion until it was too late.

Other Findings

Both subject vessels were re-examined during the investigation and both were determined to be in excess of 15 gross tons. Consequently, the relevant sections of the Canada Shipping Act and Regulations made pursuant thereto should apply.

At the time of the casualty the vessels, operating as a single unit, would appear to have not met certain aspects of the requirements of the Lifesaving Equipment Regulations, the Safe Working Practices Regulations and the Marine Occupational Safety and Health Regulations.

Neither of the two appointed masters held a certificate as required by the Canada Shipping Act and the Great Lakes Navigation Safety Regulations.

Neither the "BUOY TENDER" nor the "B I 1" was fitted with the lights prescribed by the Collision Regulations for vessels of their class.

The "B I 1" did not have her license number clearly marked on the side as required by the Small Vessel Regulations.

This is the third similar casualty, all brought to the attention of the authorities, that has occurred during the last twenty-seven months.

"FOSS 290"



Smoke from fire in cargo on "FOSS 290"
Fumée provenant de l'incendie de la cargaison du "FOSS 290"



"TAURUS" alongside "FOSS 290"
"TAURUS" le long du "FOSS 290"

"FOSS 290"

Fire in Strait of Georgia, B.C., April 22/23, 1988.

Summary

The "FOSS 290" is a non-self-propelled, deck-loading barge of 1,341 gross tons, registered in Seattle, Washington. She is used primarily on coastal voyages carrying containers and/or construction and mining equipment and supplies together with road vehicles and small boats. On April 22, 1988, she was northbound in the Strait of Georgia under the tow of the US registered, 199 gross ton tug "TAURUS"

On this voyage from Seattle to Alaska, electrical power for refrigerated cargo containers was being supplied by diesel generator units housed in a modified steel cargo container. This equipment was checked at 1105 on the morning of April 22, with the tow off Merry Island, when the chief engineer from the "TAURUS" boarded the barge. Everything was found to be operating satisfactorily and the passage was resumed, however, at about 1400, when off Mouat Islands, it was noted from the "TAURUS" that smoke was emanating from the cargo on the "FOSS 290".

As "TAURUS" moved alongside the barge, VTS were advised of the situation and they, on being informed of the dangerous goods in the cargo of the "FOSS 290", advised the relevant authorities. Having determined that there was a fire in the container housing the diesel generators, "TAURUS" crew members used portable extinguishers to extinguish some flames which had spread outside the container. A number of commercial, government and military vessels, aircraft and personnel were tasked to assist by the RCC and the fire was prevented from spreading except to containers immediately adjacent to the generator container. An empty deck-loading barge was secured alongside the "FOSS 290" and the on-board crane was used to transfer some containers and vehicles, including an LPG trailer, but periods of stronger winds hampered efforts to completely extinguish the fire.

By about 2345 the flotilla engaged in the incident was off Kiddle Point some 12 miles northwards from the location where the incident started, and approximately 6 miles from the harbour at Powell River. At 2359 the OSC advised the RCC that the flames had been extinguished, but that the containers were still smoldering and recommended taking the barge alongside a dock and utilizing the services of the local fire department.

Permission to berth at Powell River was received and the "FOSS 290" was off the dock at about 0215. With water from

the fire-fighting monitors and hoses of the attending vessels still being directed on to the smoldering cargo containers, she was secured alongside at about 0315. The fire department personnel then took over, directed water on to the containers, broke up the embers, and at about 0700, April 23, 1988, declared that the fire was out and not likely to re-ignite. After sorting and re-stowing the cargo, with damaged units being returned to Seattle on another barge, the "TAURUS" and the "FOSS 290" resumed the voyage to Alaska at 1610, April 23, 1988. There had been no personal injuries as a result of the casualty but some 680 L of diesel oil may have escaped into the waters of the Strait of Georgia. Damage to the "FOSS 290" was reportedly superficial but the damage to cargo and equipment was established at over \$350,000.

Findings

The fire aboard the American registered unmanned barge "FOSS 290", at sea in the Strait of Georgia, British Columbia, on April 22/23, 1988, started in a modified steel cargo container housing diesel engine driven electrical power generating units and was likely caused by the leakage of fuel or lubricating oil from a defective hose or fitting.

Other Findings

Some of the connections of the synthetic rubber hoses carrying fuel and lubricating oils for the diesel engine were inappropriately secured with hose clamps.

The "FOSS 290" could not be safely abandoned because she was not equipped with a suitable anchoring arrangement.

There is no overall plan of action established by any federal or provincial authority in preparedness for a major fire aboard a vessel at sea in the near coastal waters of British Columbia.

There is no established directory of vessels, equipment or personnel that may be called upon and be able to assist in fighting a major fire at sea.

It would appear that the equipment required for fighting a major fire at sea is not readily available in the coastal regions of British Columbia.

All the voluntary and other parties involved adopted positive measures to combat the fire and their efforts prevented the fire from spreading over a greater extent.

"FOSS 290"

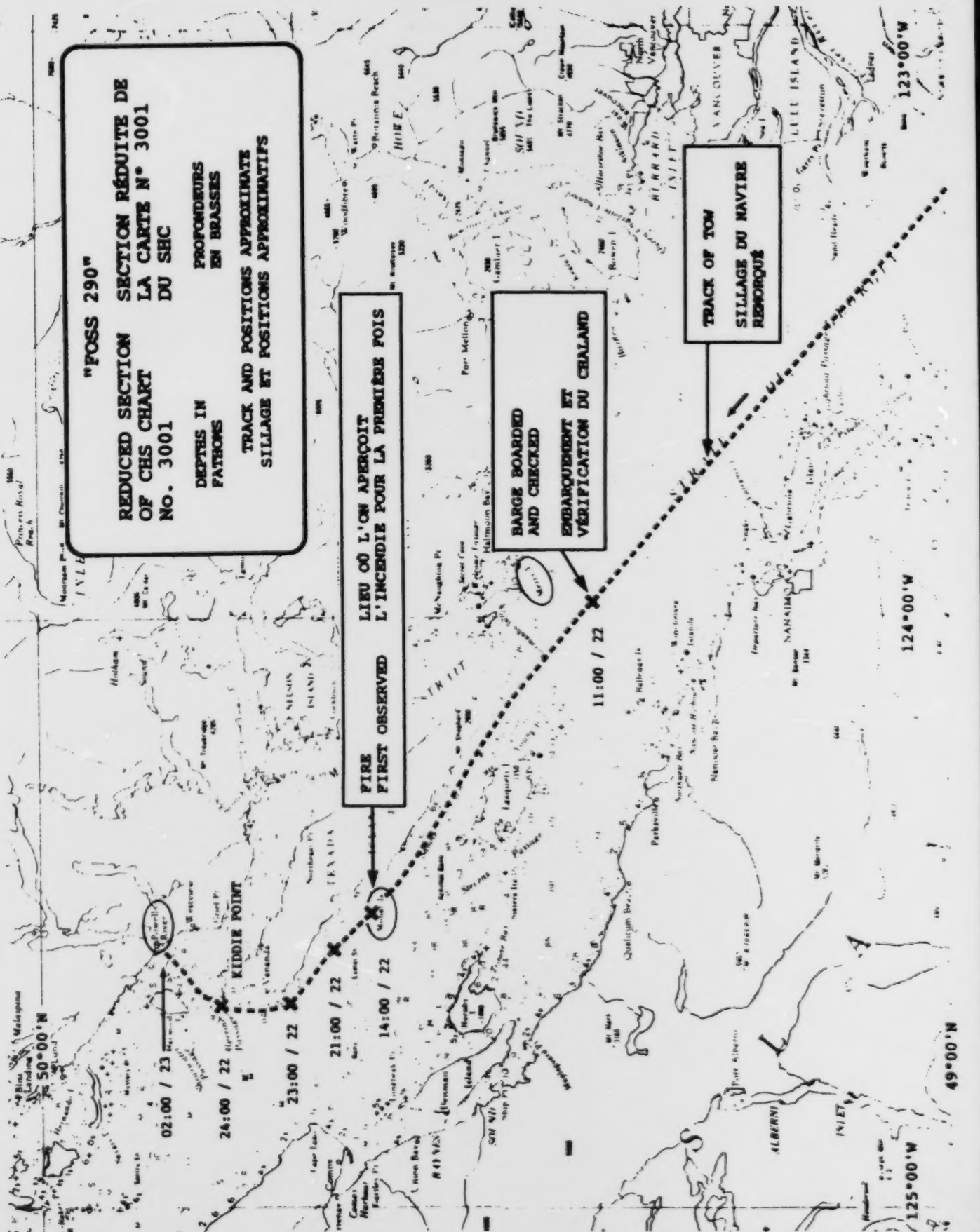
REDUCED SECTION
OF CHS CHART
NO. 3001

PROFONDEURS
EN BRASSES
TRACK AND POSITIONS APPROXIMATE
SILLAGE ET POSITIONS APPROXIMATIFS

FIRE
FIRST OBSERVED
LIEU OÙ L'ON APERÇOIT
L'INCENDIE POUR LA PREMIÈRE FOIS

BARGE BOARDED
AND CHECKED
EMBARQUEMENT ET
VÉRIFICATION DU CHALAND

TRACK OF TOW
SILLAGE DU NAVIRE
REMORQUÉ



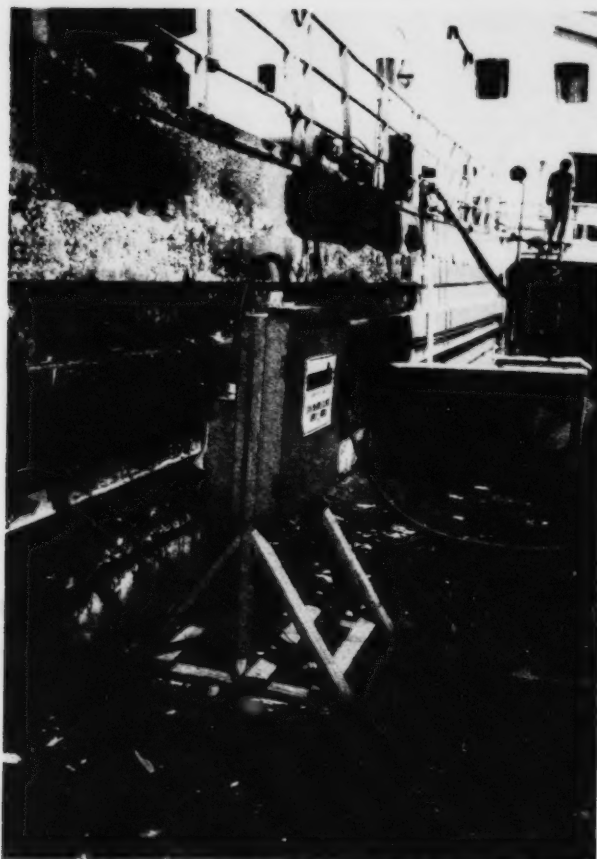
124°00'W

125°00'W

49°00'N

123°00'W

"EASTERN SHELL"



Scorched paint outside No. 4 port cargo tank.
Peinture brûlée à l'extérieur de la citerne n° 4 bâbord.



No. 4 port cargo tank work area.
Lieu de travail de la citerne n° 4 bâbord.

"EASTERN SHELL"

**Fire in cargo tank under repair, Sarnia, Ont.,
May 16, 1988.**

Summary

The "EASTERN SHELL" is a petroleum product carrier of 4,009 gross tons, built in Collingwood, Ont., in 1962 and registered in Montreal, Que. Her cargo tanks, numbered 1 to 5, port and starboard, are located between the pump-room, forward, and her machinery space, aft.

The "EASTERN SHELL" arrived at the Government Wharf at Sarnia, Ont., on May 11, 1988, to undertake structural repairs in number 3 and 4 port cargo tanks. Her tanks had been washed while enroute from her last discharge port, Parry Sound, Ont., her slops and ballast had been discharged and the tanks ventilated. That evening, a firm contracted by the repair company issued her a 'gas-free' certificate certifying that she was safe for 'hot work' but with an annotation requiring the pumping out of some residual liquid, with traces of petroleum product, from cargo tanks No. 3 and 4 port, and this was done.

Repair work, in cargo tanks No. 3 and 4, port, commenced at 0800, May 12, and continued, with day and night shifts, until 0130, May 14, when work was halted for the week-end break. Mechanical ventilation, which had been maintained throughout, was stopped and the area secured.

Sarnia experienced very hot and humid weather over the week-end with a high of 34°C, relative humidity 100% and a rainfall of 10.2 mm. When the work was resumed at 0800, May 16, mechanical ventilation was restarted but no specific check was made to ensure that safe work conditions existed within the tanks. All appeared normal until after the coffee break, at 1000; a hole was being cut in the shell plating at No. 4 port, from the outside, when a noise was heard in the tank and, on looking inside, a ball of flame and black smoke were seen at the after bulkhead, above the suction valve.

The foreman realized that he would be unable to fight the fire with his own resources and called the local fire department who arrived on the scene in about 5 minutes and had the fire extinguished within the next 20 minutes.

The master and the chief engineer assisted using the ship's fire hose and emergency fire pump. No death, injury or pollution resulted from this casualty, but considerable structural damage was caused to the ship. The costs, including delay to the ship, were in the order of a half

million dollars.

Findings

The "EASTERN SHELL" sustained a fire in No. 4(P) cargo-tank, while she lay at the Government Wharf, Sarnia, during hull repairs.

It would appear that the contributing factors were:

- oily-water residues leaked out of the suction line through a cargo tank suction valve which was prevented from seating by a piece of wood lodged in the body;
- the oily film was raised and spread over a larger area in the tank due to ingress of rain through its various openings;
- combination of Hot Work and atmospheric conditions caused the oily film to form flammable vapours; and
- a flying spark while burning an end-hole, with flame directed to the inside of the tank, provided combustion to the flammable vapours present in the cargo-tank.

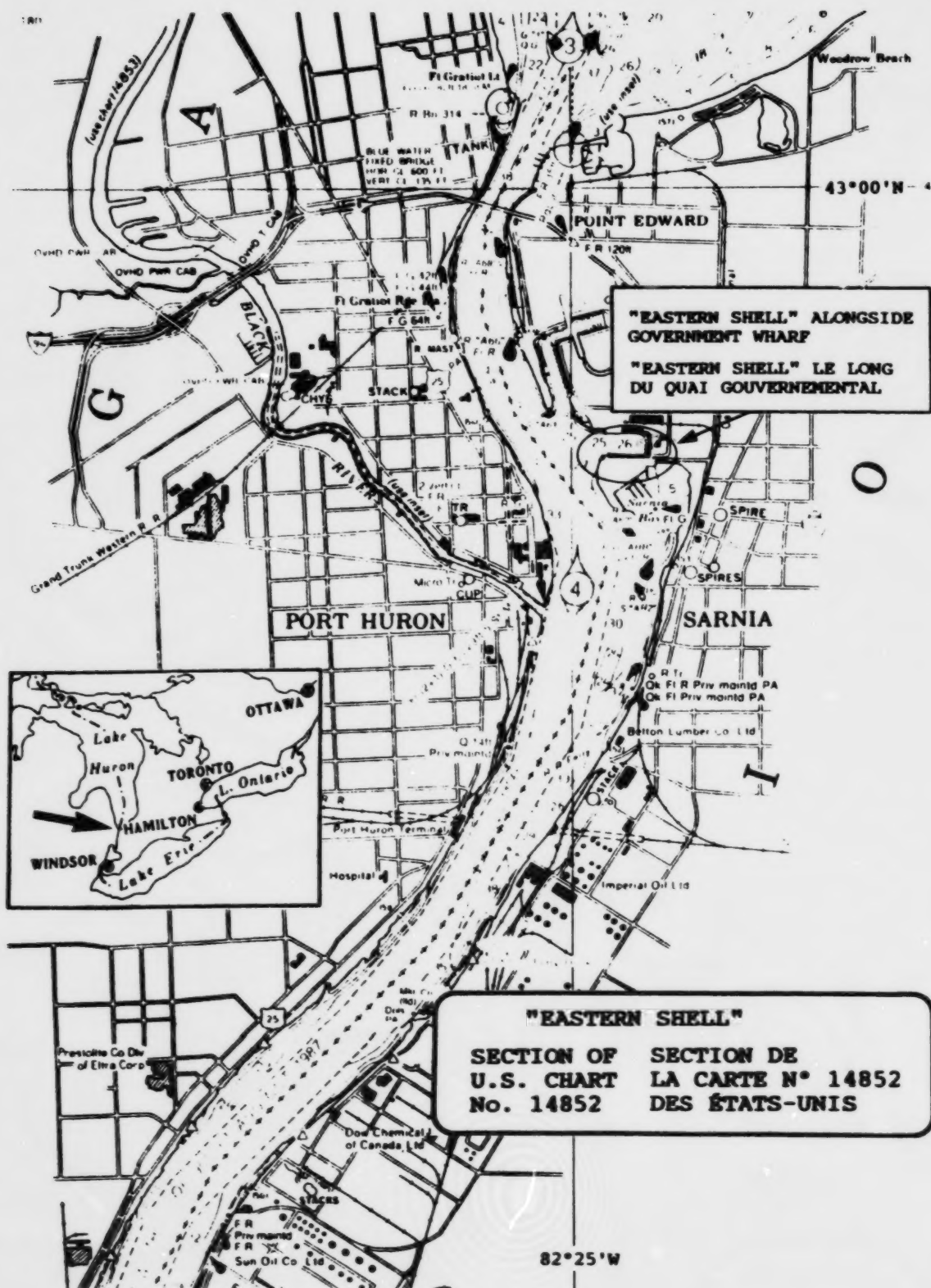
Other Findings

No intermediate gas-testing was carried out despite the smell of petroleum products.

A fire-watch was maintained, May 16, from a location outside and approximately 3.5 m above the position of the portable fire-extinguisher in #4(P) cargo-tank.

The fire-fighting equipment availability at the wharf was not checked.

The action of the foreman and the response of the local fire department and other government agencies was prompt and professional.





"FRANK H. BROWN"



"ALEUTIAN DAWN"

"FRANK H. BROWN"/"ALEUTIAN DAWN"

Collision in Seaforth Channel, B.C., May 20, 1988.

Summary

The "FRANK H. BROWN" is a tanker/container vessel of 8,040 gross tons, custom built to trade between Vancouver, B.C., and Skagway, Alaska, and registered in Vancouver, B.C. The "ALEUTIAN DAWN" is a well equipped, well found, 80 gross ton seine-net fishing vessel registered in Juneau and which fishes primarily in Alaskan waters.

Shortly after midnight on May 20, 1988, the two vessels were approaching one another in Seaforth Channel in the Inner Passage; the "FRANK H. BROWN" southbound from Ketchikan to Vancouver with containerized freight and the "ALEUTIAN DAWN", in company with another fishing vessel, the "PISCES", repositioning after wintering in Bellingham, Washington. The "FRANK H. BROWN" was participating in the VTS traffic scheme and the "ALEUTIAN DAWN" was not. Weather conditions were fine and clear in the sheltered waters of Seaforth Channel and the vessels detected one another by sight and by radar at between 5 to 6 miles.

Differing testimony on the part of both vessels makes it impossible to reconstruct the exact tracks followed by each vessel or to be certain whether the "ALEUTIAN DAWN" passed to the north or south of Dall Rocks and whether the "FRANK H. BROWN" made a course alteration at Idol Point. However, the "ALEUTIAN DAWN" altered course to starboard to the north side of the channel, for a port-to-port passing and the "FRANK H. BROWN" altered course to port, to the north side of the channel, to indicate that she required to make a wide approach to Dall Rocks. Then, at 0106, despite the "FRANK H. BROWN" sounding a warning signal and last-minute evasive action by both vessels, they collided. After exchanging particulars, both vessels were able to proceed, the damaged "ALEUTIAN DAWN" escorted by the "PISCES".

Findings

On May 20, 1988, the Canadian tanker/container vessel "FRANK H. BROWN" was in collision with the American fishing vessel "ALEUTIAN DAWN" during fine and clear weather conditions in the sheltered waters of Seaforth Channel, B.C. due to the alter course actions of both vessels, in effect, negating each other. The fibreglass bow section of the "ALEUTIAN DAWN" sustained extensive damage when the small fishing vessel struck the starboard bow of the steel constructed "FRANK H. BROWN".

In view of the conflicting evidence regarding the aspects of the two vessels, but considering that they were approaching each other either in line or nearly in line, or in a crossing situation with the "ALEUTIAN DAWN" on the "FRANK H. BROWN"'s starboard side, it would appear that the following factors contributed to the collision:

Both vessels

- neither vessel used or attempted to use the VHF R/T;
- each vessel altered course in small increments thus not making her intentions readily apparent to the other vessel, and
- both vessels maintained full service speed until collision was inevitable.

"FRANK H. BROWN"

- altered course to port in a head-on situation or, alternatively, did not take the preferred action in a crossing situation;
- did not keep to the starboard side of the channel or indicate her intentions by available methods, and
- acted on assumptions based on scanty information.

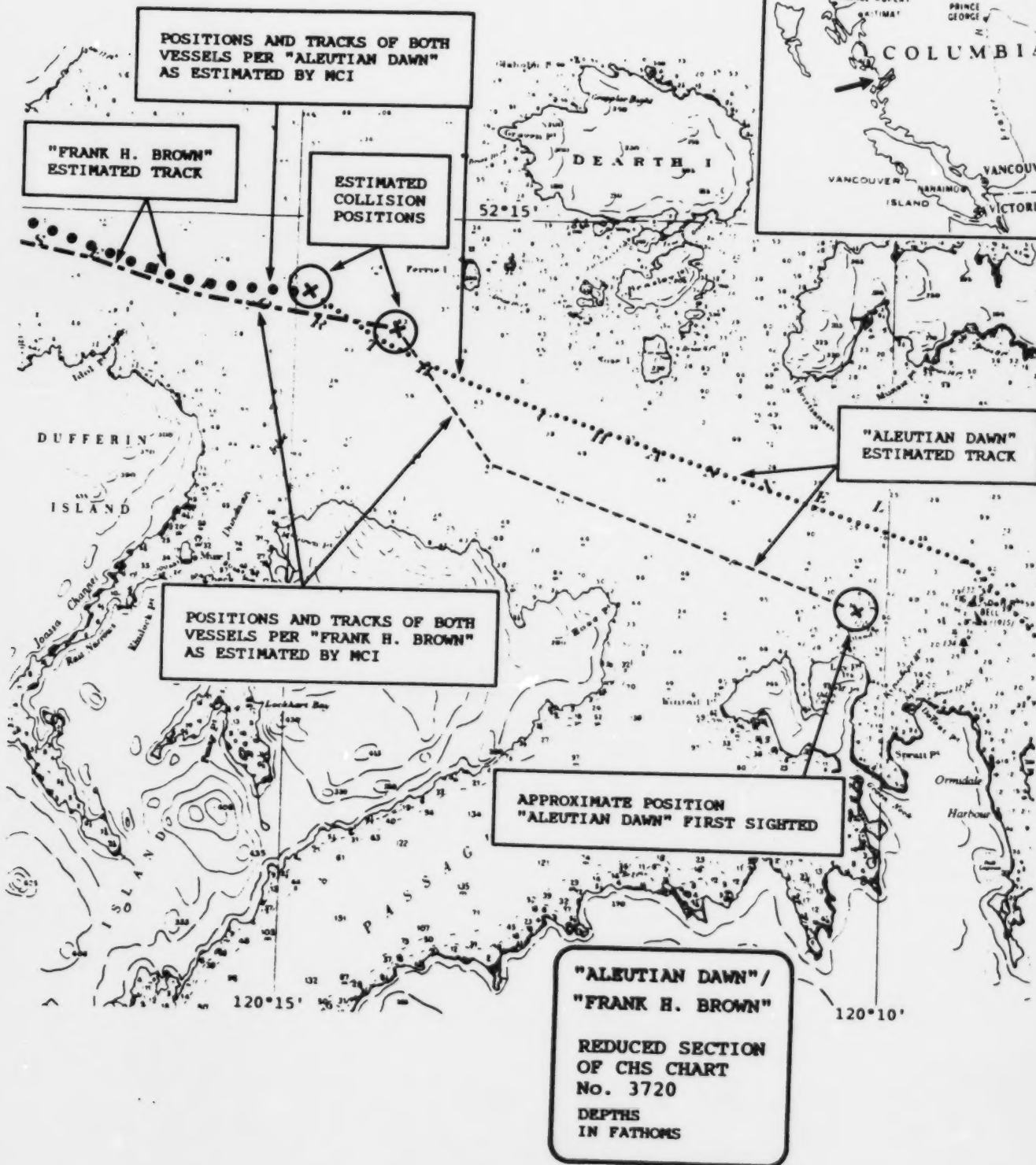
"ALEUTIAN DAWN"

- rather than using the official charts of the area, was navigating using a marine atlas, which did not have the detail to enable the vessel to sail with confidence close inshore, and
- was reportedly sailing with her floodlights on.

Other Findings

The "ALEUTIAN DAWN" was not guarding the VHF R/T channel 16 and/or 11, nor was it required by regulations; however the guarding of such channels is deemed to be good seamanship.

The "PISCES", from the appearance of her navigation lights, was keeping to the south shore, and her actions are not considered contributory to this casualty.



"BERING STRAITS"



Views of salvaged tug.
Vues du sauvetage du remorqueur.



"BERING STRAITS"

Girding and sinking, North Arm, Fraser River, B.C.
October 14, 1988.

Summary

The "BERING STRAITS", of Canadian registry, is a 59 gross ton tug built in Vancouver, B.C., in 1965. She is propelled by a single fixed-pitch propeller housed in a directional Kort nozzle. The main engine is directly controllable from either the wheel-house, the flying bridge or the working console, located to starboard on the after deck. At these three locations there are also tow 'abort' controls to immediately reduce tension in the tow-line. She operates with a crew of two, a master and a deck-hand.

On the night of October 13/14, 1988, the "BERING STRAITS" was engaged in the routine movement of barges in the Fraser river. At 0030, October 14, she was towing the loaded chip barge "RIVTOW 1001" close astern bound for Musqueam tie-up. The "RIVTOW 1001" is a 891 gross ton, flat-deck barge with a raked bow and skegs aft. The weather was overcast with heavy rain showers but otherwise the visibility was good and the wind was calm. It was the last hour of the ebb tide.

There was another barge to be handled by the "BERING STRAITS" and when she had passed the Arthur Laing bridge downbound it was decided she should pass the tow of the "RIVTOW 1001" to the tug "WESTMINSTER WARRIOR". The master was navigating the "BERING STRAITS" from the flying bridge and the deck-hand was positioned at the after deck console. To prepare for the hand-over, in the vicinity of the McCleery golf course, the "BERING STRAITS" turned to starboard to stem the current, coming close to the logs secured along the river bank. The barge reportedly swung with the tug, however, held by the tow-line and carried by her own speed and the current, she passed the tug, pivoted around the tug's stern with her own stern swinging in a complete semi-circle downstream until she was pulling the "BERING STRAITS" over to port.

Seeing that the tug was heeling dangerously to port with the port side of the deck already submerged, the master and the deck-hand reportedly hit the 'abort' controls on the flying bridge and on the console several times. Reportedly the tow-line paid out some six to eight metres and then stopped tight. The brake at the console was 'on'. When the brake is 'on' the tow-line will pay out only while the 'abort' control is depressed, whereas if the brake is 'off' the tow-line will pay out completely or until the brake is engaged.

With the tug girded and lying on her side, the deck-hand and the master jumped onto the adjacent log boom from where they were rescued by the "WESTMINSTER WARRIOR". The "WESTMINSTER WARRIOR" reported the incident to VTS by radiotelephone and towed the barge over to the tie-up.

There were no fatalities or reported injuries resulting from this incident. The tug was subsequently salvaged and towed to a local shipyard for repairs estimated at approximately \$50,000.

Findings

At 0145, October 14, 1988, the tug "BERING STRAITS" was girded by her tow, capsized and sank in the North Arm of the Fraser River, B.C.

It would appear that the following were the contributing factors to this incident:

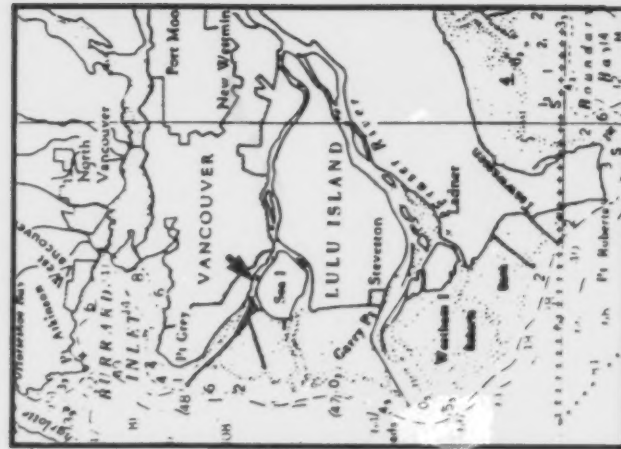
- the brake control lever was in the 'on' position and no order was given to put it to the 'off' position;
- the crew, acting in haste, with the heavy angle of heel, was not able to hold the abort knob long enough to release sufficient length of wire to avert the capsizing, and
- the "BERING STRAITS" was not using stern pins or, more particularly, a 'gob' rope or any other anti-girding device.

Other Findings

The capsize was very quick and no distress message was possible.

The close proximity of the log boom and the assist tug was fortuitous.

There are considerable variations between the various company tugs in the layout and operation of the winch control and abort systems.



"BERING STRAITS"
SECTION OF
CHS CHART
NO. 3491
LA CARTE N° 3491
DEPTHS IN
METRES
PROFONDEURS
EN METRES

TERRAIN DE GOLF
McCLEERY
GOLF COURSE

TUG GIRDED
AND SANK
REMORQUEUR CEINTRE
ET ENGLOUTI

Marine Drive
Golf Course

"BERING STRAITS"
AND "RIVTOW 1001"
APPROXIMATE TRACK
ET DU "RIVTOW 1001"

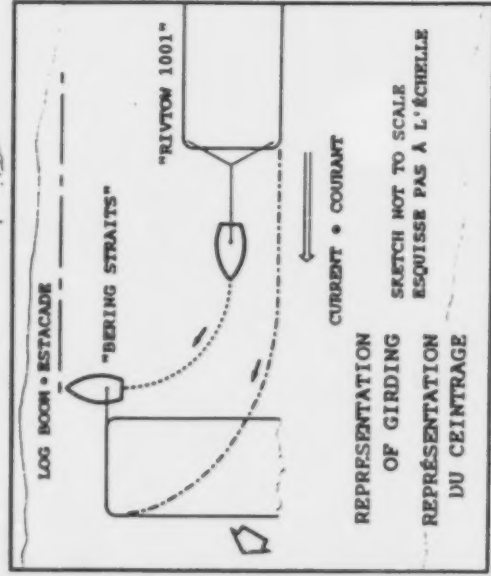
49°12'N

123°10'W

SEA ISLAND

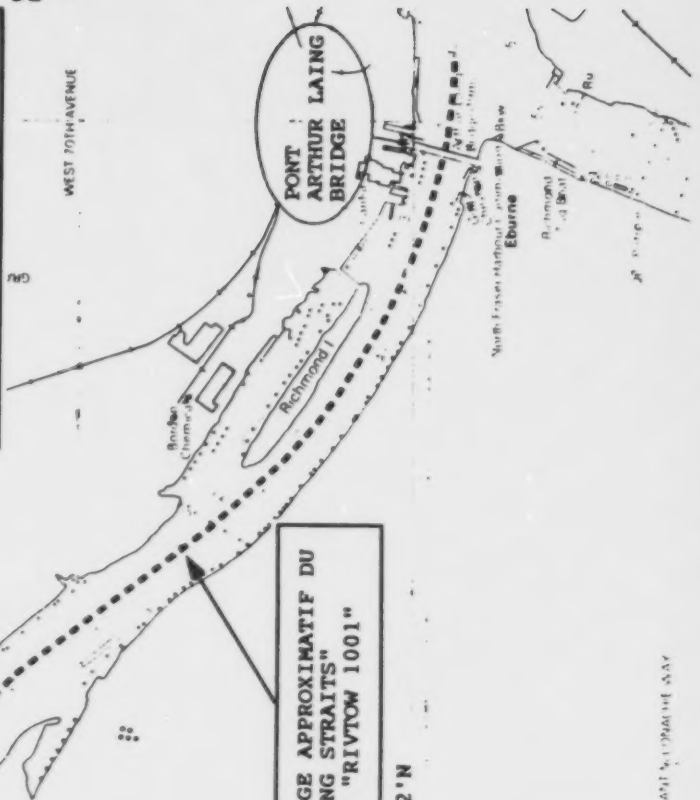


BASED ON 1941 NAVY

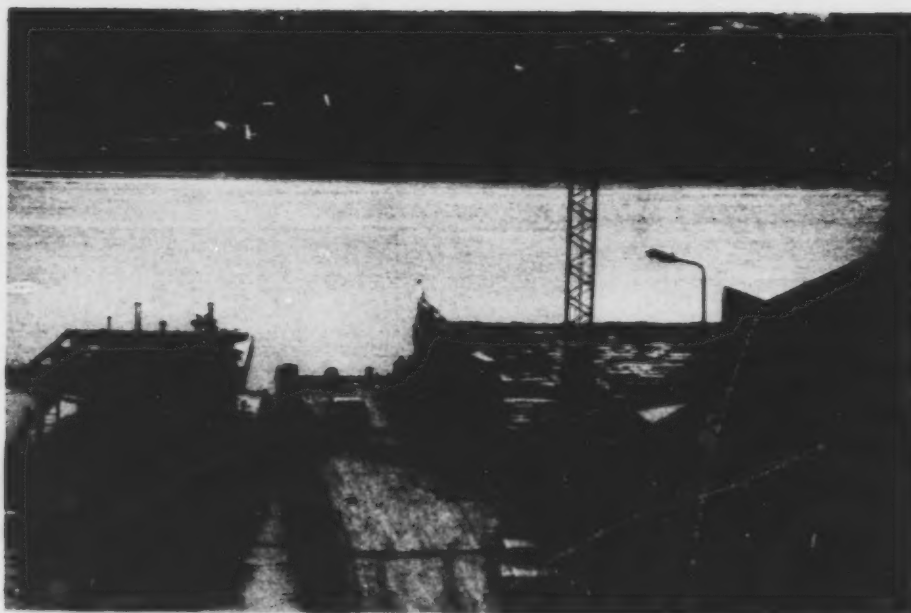


POSTE D'AMARRAGE DE
MUSQUEAM
TIE UP

McDonald Slough



"PT 46"



Undergoing repairs.

En réparation.

"PT 46"

Capsizing in Malaspina Strait, B.C., October 20, 1988.

Summary

The "PT 46" is one of a number of similar barges built and designed to transport aggregate on the B.C. coast. She has an open cargo box on deck with 2 m high fore-and-aft steel bulwarks, port and starboard, over a length of some 65 m; the forward and after ends of the box are open enabling mobile loading unloading equipment to operate freely. The "WESTVIEW CHINOOK" is a 52 gross ton tug, built in 1981, which was attending the "PT 46" on October 20, 1988, when the barge loaded approximately 4,100 t of gravel at a quarry located close to Cape Cockburn on Nelson Island, B.C. Both vessels are Canadian registry.

Routine freeboard measurements were taken on completion of loading which showed that the barge had a slight heel to port and trim by the stern. The barge had a mean freeboard of 0.38 m. At 1425, the towing cable was paid out to full length and the vessels departed on the return voyage to the Fraser River.

Weather conditions were reportedly good with calm winds and a slight sea. The barge was reportedly following in a normal manner with the exception she had a tendency to crab slightly to starboard, occasionally taking some seas on deck on her port side.

At 1625, when the tug and barge were approaching Welcome Passage, a slight jerk was felt on the towline and it was discovered that the barge had capsized and was floating upside-down. A depth sounding registered 91 m. The tug continued towing to prevent the bridle from slipping off the barge, and following a radiotelephone consultation with the owners, the tug was ordered to proceed directly to a shipyard in North Vancouver.

On November 8, the barge was righted and structural damage to her port side bulwark and deck plating was subsequently repaired at an approximate cost of \$150,000.

Findings

In the afternoon of October 20, 1988, in good weather conditions, the tug "WESTVIEW CHINOOK", with the loaded barge "PT 46" in tow, was on a routine voyage from Nelson Island to the Fraser River. At 1625, on approaching Welcome Passage the barge overturned to port losing her deck cargo, and remained afloat in an upside-down condition.

It would appear that the following factors contributed to the capsizing:

- on departure the barge was trimmed by the stern and heeled slightly to port;
- the barge was more heavily loaded than on previous similar voyages, leaving insufficient freeboard to ensure an adequate margin of reserve transverse stability for the intended voyage;
- the low freeboard allowed water to be shipped and retained on deck in relatively calm weather conditions;
- the weight, heeling and free-surface effects of the water shipped on the port side further reduced the freeboard, increased the angle of heel and reduced the barge's initial and dynamic transverse stability, and
- as the heeling increased the angle of repose of the sloping port side faces of the deck cargo was exceeded and the additional heeling effect of the subsequent shift of cargo overcame the transverse stability, causing the barge to capsize.

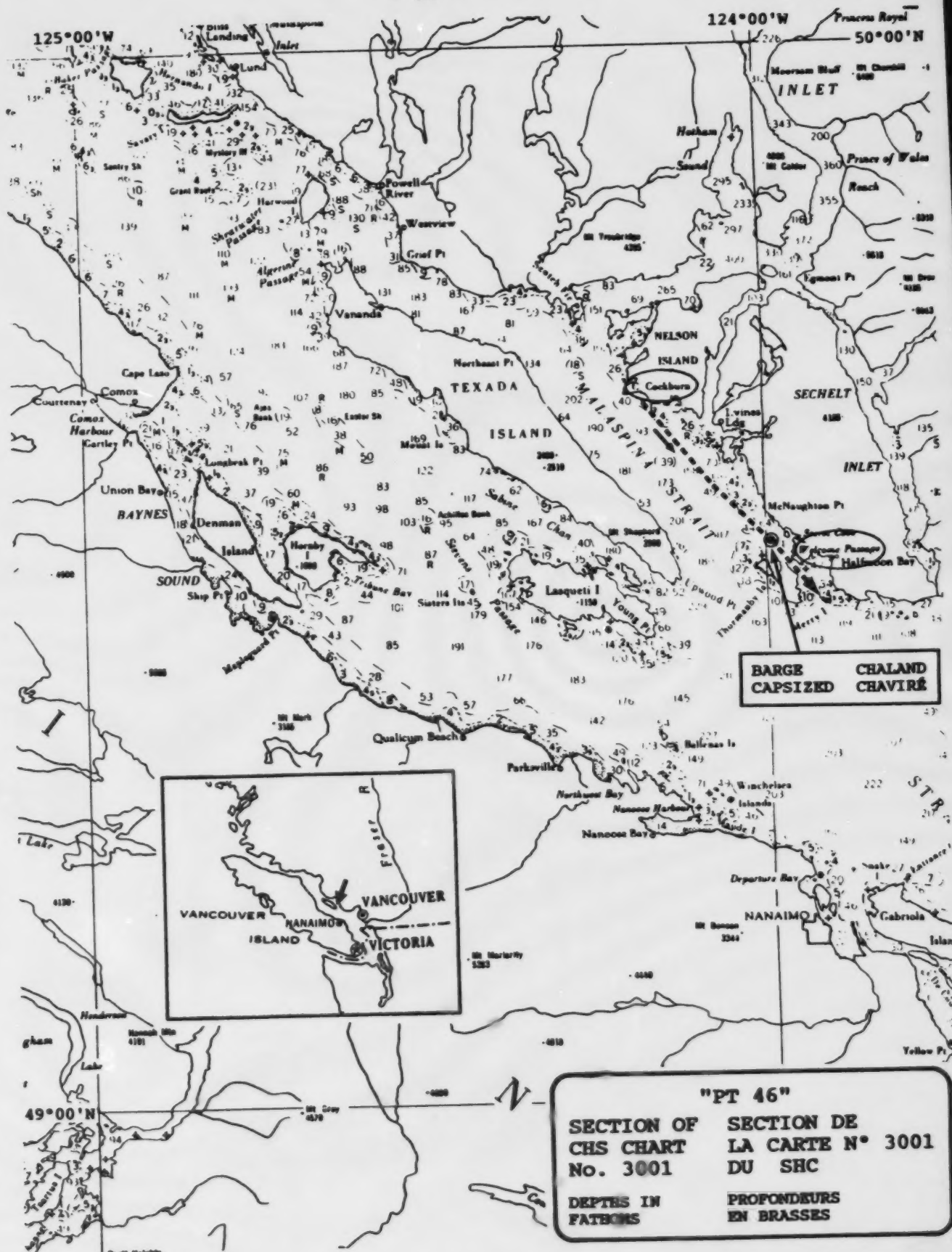
Other Findings

Barge "PT 46" had no assigned Load Line nor was one required by regulation; she was customarily loaded to a mean freeboard of approximately 45 cm.

The crew member overseeing the loading of the barge had no previous experience loading aggregates on the "PT 46".

The incident was not reported to the Coast Guard.

Painted steel plates located at the four corners of the barge to indicate a safe 'company' freeboard, as adopted by some barge operators for the guidance of loading personnel in lieu of officially assigned Load Line marks, were not fitted to the "PT 46".



"EVA COB"



Note scuffed paint.

Remarquez la peinture égratignée.

"EVA COB"

Struck Wharf in Halifax Harbour, January 22, 1989.

Summary

The "EVA COB" is a petroleum product tanker of 10,683 gross tons, with bridge, accommodation and machinery space aft. She was built in Uddevalla, Sweden, in 1968 and is registered in Panama.

At 0135, January 22, 1989, the "EVA COB" picked up a pilot at the Halifax, N.S., pilot station. The vessel was en route from Brownsville, Texas, to Lewisporte, Newfoundland, and was calling at Halifax for bunkers, the intention being to take them from a barge at No. 1 anchorage. The previous day, bad weather had been experienced with westerly winds increasing throughout the day and evening up to approximately 60 knots. This caused the vessel to ship water on her main deck and foc'sle and spray overall which, with temperatures falling to -12°C caused ice to form on many exposed surfaces including the windlass.

The crew had begun clearing the ice from the windlass shortly before the pilot boarded and the work continued as the "EVA COB" proceeded into the harbour. The wind was still strong at 30 knots from between NW and WNW. The air temperature was -12°C and the visibility was good although there were reportedly areas with sea smoke.

By the time the vessel reached No. 1 anchorage the windlass was still not operational and after passing Georges Island to port, course was adjusted towards No. 2 anchorage. When it became clear that the windlass would still not be ready in time to anchor there, it was decided to proceed to the north and west of (take a turn around) Georges Island and proceed back to No. 1 anchorage. At 0244 the vessel passed No. 2 anchorage, the engines were put from stop to 'dead slow ahead' and the wheel reportedly put to port 20° . As the vessel passed to the north of Georges Island and approximately $\frac{1}{2}$ cable south of the stern of another tanker lying at anchor, the wheel was put 'hard-a-port'.

After she passed this tanker the pilot checked the radar and noticed the "EVA COB" was approximately $2\frac{1}{2}$ cables from the shore. Shortly after this both the master and the pilot became concerned with the turning room available for the vessel and the main engine was put to slow ahead and then half ahead to increase the rate of turn. The pilot then noticed a light showing from the building on the Eastern Canada Towing Company (ECTUG) dock and briefly considered putting the main engine astern but decided the vessel was carrying too much way. With the vessel a cable or less to

Eastern Canada Towing Company dock.
Quai de la compagnie Eastern Canada Towing.



Note outside light above doorway.
Remarquez le feu extérieur au-dessus du porche.



Note damaged radio aerial.
Remarquez l'antenne radio endommagé.

the north of the ECTUG dock the pilot ordered full ahead to further accentuate the turn.

At 0255 while still swinging to port and while on a heading of between 185° and 190° T and G, the starboard bow of the "EVA COB" struck the south east corner of the ECTUG dock demolishing most of the seaward end of the dock almost up to the building. The speed of the vessel on contact was variously estimated as being between 3 and 5 knots. Inside the building the duty tug dispatcher felt the building shake heavily and as he looked out he saw the vessel going past. The vessel was manoeuvred back to port and into the channel.

At 0257 VTS were advised of the casualty; they had not previously noticed the striking taking place on their radar. At the time their attention had been centred on a loaded fuel barge dragging her anchor elsewhere in the harbour.

Several minutes later the "EVA COB's" windlass was ready to use and at 0332 the vessel anchored in No. 1 anchorage in preparation for taking her bunkers.

Only slight damage was sustained by the vessel on her starboard side above the water line and this was of such a minor nature that repairs were not anticipated. The vessel was not holed and there was no indication or report that she had grounded. There were no injuries or pollution as a result of this incident. Repairs to the dock were expected to cost in the region of \$150,000.

Findings

The Panamanian registered tanker "EVA COB" struck the Eastern Canada Towing Limited dock in Halifax harbour on January 22, 1989, in conditions of strong winds, due to an error in handling the vessel. It would appear that the following factors contributed to this casualty.

- the vessel was unable to anchor as intended because the windlass was iced-up;
- insufficient prior consideration was given to the vessel's turning circle at slow speed, with the prevailing wind conditions;
- the strong wind of 30 knots acting on the starboard side of the vessel's superstructure slowed the rate of turn to port;
- the increase of ahead engine revolutions to enable the vessel to turn faster was undertaken too late;

- the rudder was placed hard a port too late in the turn;
- the engine was not placed full astern while sufficient time and sea room remained to stop the vessel, when it became apparent that the vessel was turning too slowly to complete the turn with an adequate safety margin; and
- the anchors were not available for use because of the ice to either assist in turning the vessel or to assist in arresting her forward progress.

Other Findings

The vessel did not report to VTS, as soon as she became aware the fact that her windlass was inoperable due to ice.

Steam or hot water were not used by the vessel to assist in more rapidly thawing her windlass.

Although it was reported that the steering gear was operating properly during arrival in Halifax, certain deficiencies were reported and discovered some days later.

VTS were closely monitoring a tug, with a barge of jet fuel, which had previously dragged her anchor.

VTS did not place significance, due perhaps to poor echo quality, on the vessel's echo on their radar screen closing and combining with the Halifax shore.

The offshore end of the dock that was struck by the vessel was unlit.

The initial Coast Guard Traffic Centre incident report mentioned that there was no damage to the dock.

A tug was not ordered to escort the vessel, which had no means of anchoring for any emergency, in the approaches and restricted waters of Halifax harbour.

The vessel did not carry a third deck officer to perform routine duties on the bridge.

63°34'W

63°33'W

WIND VENT
30 KN A 30 KN

"THOR" AND "THOR" ET
"E57" "E57"
23:38/21 23:38/21

"THOR" AND
"E57"
02:55/22
"THOR" ET
"E57"
02:55/22

SLOW EN AVANT
AHEAD LENTE
02:52 02:52

HALF EN AVANT
AHEAD DEMIE

"ATLANTIC AMITY"

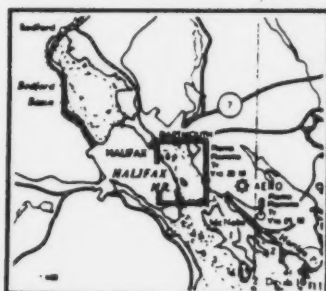
FULL EN AVANT
AHEAD TOUTE

02:55

DEAD EN AVANT
SLOW TRÈS
AHEAD LENTE
02:44 02:44

BERTHED NAVIRE
VESSEL ACCOSTÉ

TRACK OF "EVA COB" SILLAGE DU
"EVA COB"



"EVA COB"

REDUCED SECTION
OF CHS CHART
No. 4202

DEPTHS IN
METRES

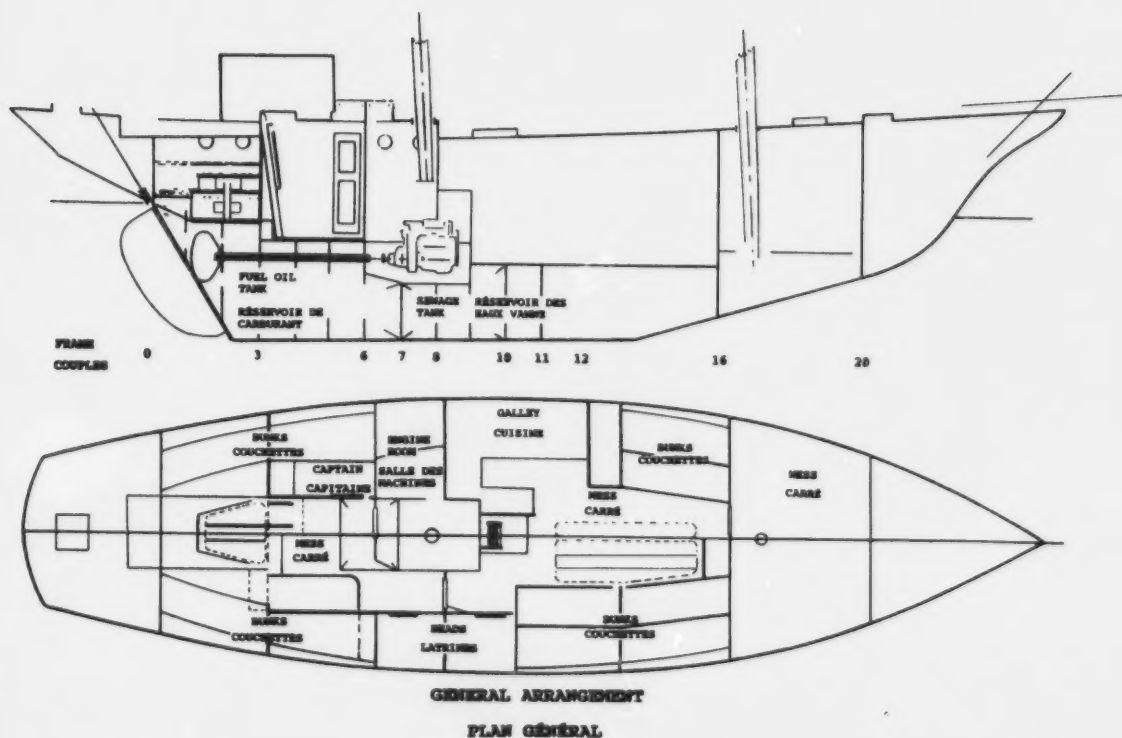
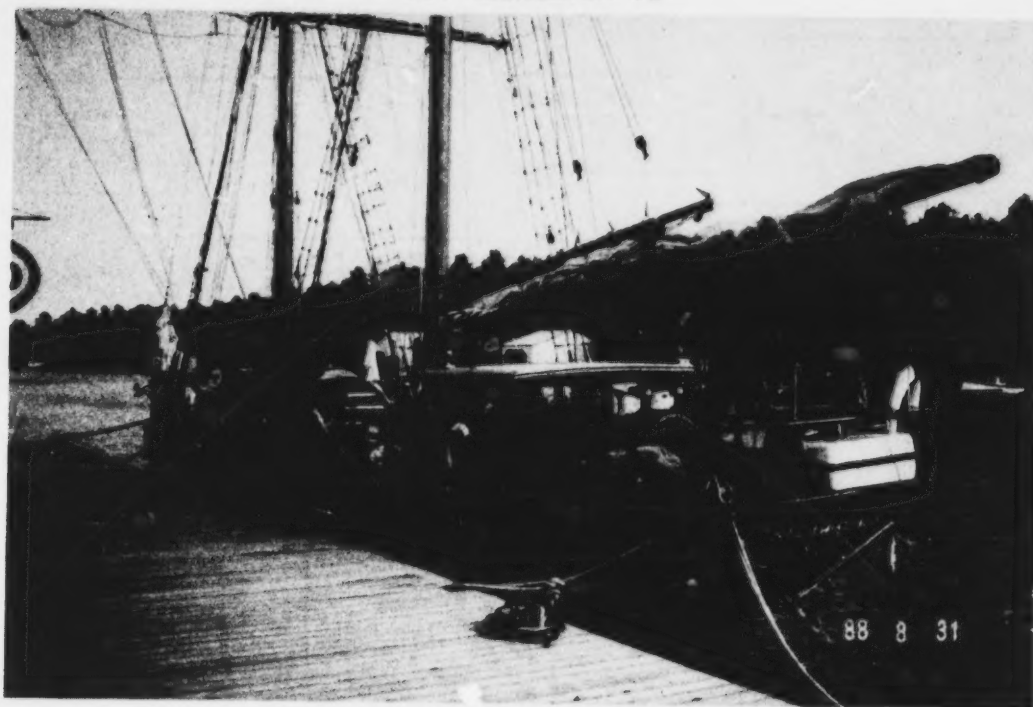
SECTION RÉDUITE
DE LA CARTE
N° 4202 DU SHC

PROFONDEURS
EN MÈTRES

ALL TRACKS AND POSITIONS ARE APPROXIMATE
TOUS LES SILLAGES ET POSITIONS SONT APPROXIMATIFS

02:28

"ST. LAWRENCE II"



"ST. LAWRENCE II"

Grounding in Georgian Bay, August 30, 1989.

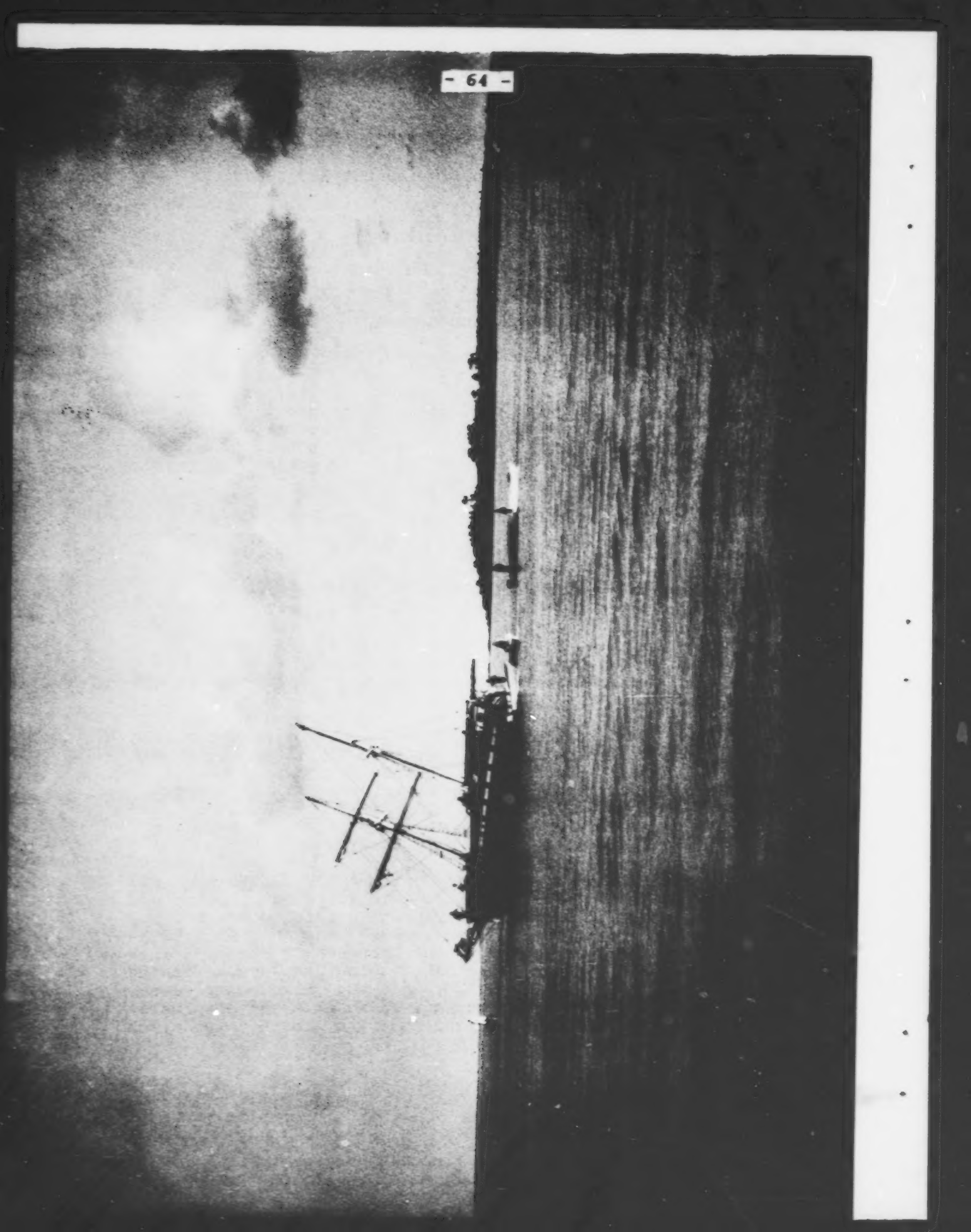
Summary

The "ST. LAWRENCE II" is a sail training brigantine of 34.3 gross tons. She is registered as a yacht and manned by a regular crew but also carries trainees who pay a fee for a one or two week cruise. Her navigational equipment consisted of a Loran 'C', magnetic compass and a VHF radiotelephone.

On August 22, 1988, the vessel left Erieau, Ont., to begin a cruise with a crew of 11 plus 8 trainees. During the next week, she cleared Lake Erie, crossed Lake Huron and entered Georgian Bay via North Passage, anchoring in Baie Fine on the evening of August 29. In this period the vessel touched bottom on three occasions.

The following day, August 30, on passage from Baie Fine to Killarney, the "ST. LAWRENCE II" again touched bottom on two occasions. That evening at about 1900, it was raining, the visibility was 3 miles and there was a light southerly breeze as the vessel rounded the eastern end of Badgeley Island under power. The intended track was between buoys EA2 and E14, off Maxwell Point, and the vessel put the leading marks on Badgeley Point astern believing the ranges would lead between the buoys. However, the ranges were lost from sight and the course was altered to port whereupon she grounded heavily close north of buoy EA2, immediately listing some 45° to starboard. The ranges would have led the "ST. LAWRENCE II" safely between Maxwell Point and buoy EA2, parallel to the intended track. Initially, the skipper was intent on trying to refloat his vessel, using crew members in these efforts but after some two hours, the "ST. LAWRENCE II" was evacuated, except for a skeleton crew, and was towed clear of the rocks by a CMRA vessel at 2143. A subsequent underwater inspection revealed only scoring of paint.

A further incident occurred September 20, 1988 when the "ST. LAWRENCE II" lost all power, lost her steering and sustained damage to her sails during gale force winds in Lake Huron. The position of the vessel was not able to be determined but was estimated to be between 10 and 25 miles from the shore. The ensuing SAR mission involved a fishing vessel, the CCGC "CAPE HURD", a U.S. fixed-wing rescue aircraft and a rescue helicopter. The aircraft eventually located the "ST. LAWRENCE II" and she was towed to Goderich by the "CAPE HURD".



Findings

Casualty No. 1

The Canadian sail-training vessel "ST. LAWRENCE II" grounded on rocks north-east of Maxwell Point, Badgeley Island due to an error in navigation.

It would appear that the following factors contributed to the grounding:

- the 'watch officer' had only a limited experience in and knowledge of chartwork and navigation;
- the 'watch officer' did not have the appropriate chart close at hand for constant reference;
- in an unfamiliar area, only one person was on the quarterdeck at the command position, with the responsibilities of attending to the navigation, the steering and the keeping of a look-out, contrary to the practices of good seamanship; and
- the skipper, although reported to have been on deck did not monitor the vessel's progress in relatively hazardous and unfamiliar waters until the grounding was unavoidable.

Other Findings

The deviations for the magnetic compass had not been determined for over a year despite structural changes having been made to the vessel.

The vessel did not have the latest publications aboard and the chart in use was not corrected with the latest Notices to Mariners.

Whilst the radio station aboard the vessel was licensed, the licence was neither carried nor conspicuously displayed aboard the vessel as required by the General Radio Regulations.

Certain recommendations made in 1988, by a Ship Safety Officer of the Canadian Coast Guard, for the safe operation of the vessel had not been remedied.

There were insufficient pyrotechnics aboard to meet the requirements of the Small Vessel Regulations.

None of the trainees were instructed in the use and wearing of lifejackets contrary to the owners Standing

Orders and the practices of good seamanship.

The lifejackets aboard the vessel were not fitted with whistles or retro-reflective tape as required by the Life Saving Equipment Regulations.

Suggestions made to the skipper by an experience CMRA member, with regard to the safe evacuation of the trainees, went unheeded resulting in an unnecessary delay in refloating the vessel.

The subject casualty and a subsequent potentially dangerous situation were reported to the authorities by persons other than those on board the vessel.

Casualty No. 2

The vessel sailed into gale force winds, her sails tore, her engine and steering failed and she became distressed requiring a major SAR response. It would appear that the following factors contributed to the distress:

- the vessel sailed regardless of a small craft warning (thunderstorms);
- the vessel sailed with an engine which previously had a failure the cause of which had not been precisely diagnosed;
- the steering gear failed due to a connecting pin being sheared during adverse weather; and
- the majority of the crew were trainees with no, or limited, marine experience and this was further compounded by a majority of them falling seasick.

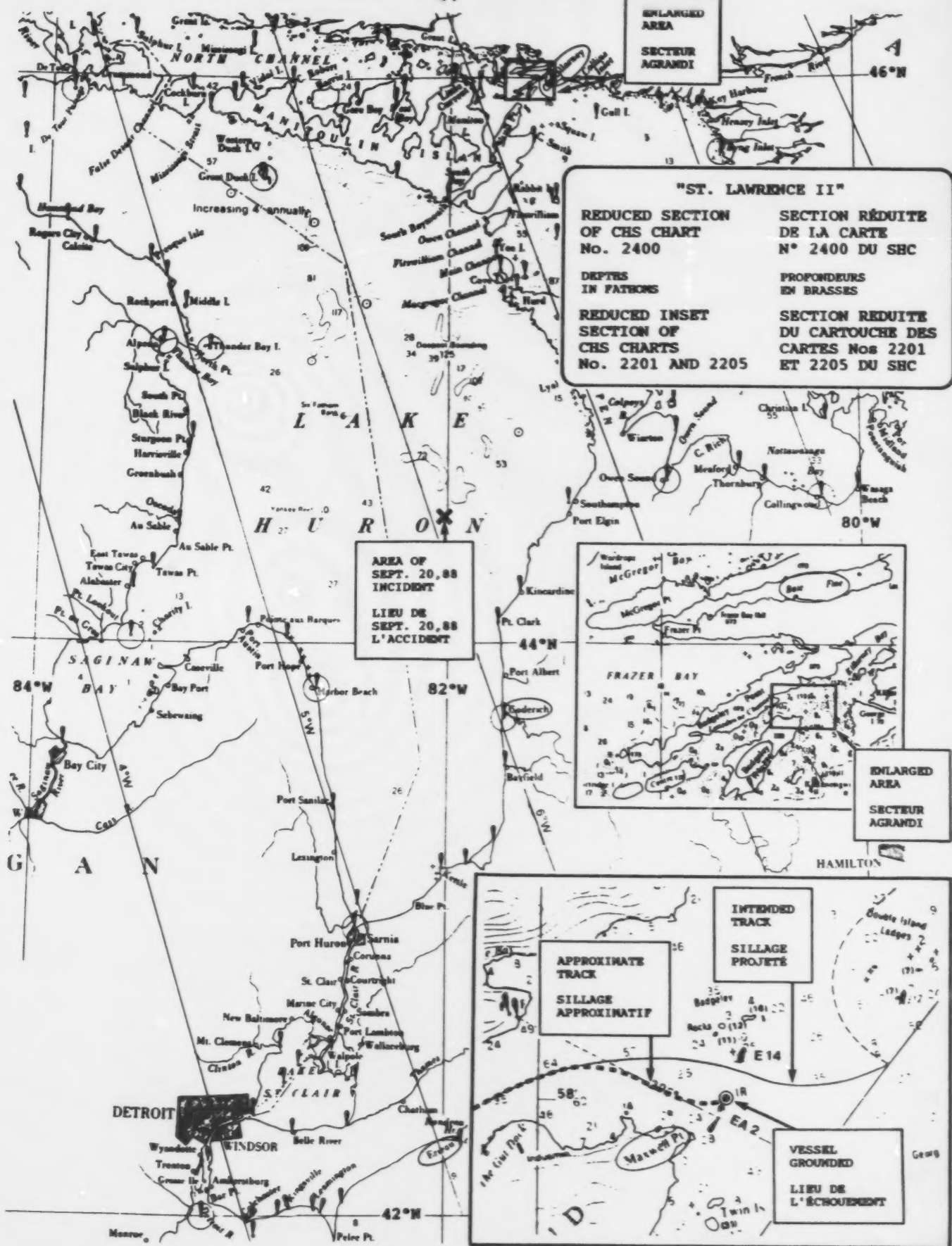
Other Findings

The only electronic position fixing equipment was de-activated during an electrical storm and failed to operate correctly when re-activated later.

General Findings

The legal status of the trainees aboard this vessel, and other similar vessels, is unclear.

Registered as a pleasure craft under 100 gross tons, there is no regulatory requirement for sail training vessels to have duly certificated masters.



"HUBERT GAUCHER"



Vessel aground
Navire échoué



During the refloating operation
Durant les opérations de renflouement

"HUBERT GAUCHER"

Grounding in the Port of Quebec, September 1, 1988.

Summary

The "HUBERT GAUCHER" is a coastal tanker engaged in the transportation of petroleum products. Her engine-room, bridge and accommodation are located aft. She has 18 cargo tanks and the main engine is bridge-controlled. She was built in Lauzon, Que., in 1982.

On September 1, 1988, having loaded a cargo of gasoline and diesel oil, the "HUBERT GAUCHER" prepared to leave the Ultramar terminal in Quebec City for the Port of Montreal.

At 2320, under the conduct of a pilot and with the tug "DONALD P" assisting, the vessel began to move astern along the quay, as was the usual practice. The visibility was good and the wind was from the south-west at about 10 knots. Although it was just after the predicted time of high water, the tidal current was reportedly still flooding as the "HUBERT GAUCHER" moved astern using her main engine and with the tug towing aft. Considerable use was being made of the bow thruster and the tug reported difficulty in pulling the stern of the "HUBERT GAUCHER" towards open water. Latterly, the main engine was put to 'slow ahead' with the rudder 'hard-a-port' to try to assist the tug.

Finally, the tanker's stern grounded on the remains of an old wooden wharf downstream of the Ultramar terminal. At this time the main engine could not be started and attempts by the tug to move the "HUBERT GAUCHER" from her grounded position were unsuccessful.

It was not until the next day, at about 1115, with the rising tide and with other tugs in attendance and while transferring part of her cargo to another tanker that the "HUBERT GAUCHER" finally refloated.

She was taken to section 102 for inspection and no apparent damage to her hull or machinery was found. There were no injuries as a result of this casualty.

Findings

On September 1, 1988, while the Canadian tanker "HUBERT GAUCHER" was in the process of departing, in good weather conditions but at night, from the Ultramar terminal in the Port of Quebec, the vessel grounded on the remains of an old wooden wharf because of a manoeuvring error. It would appear that the following factors contributed to the grounding:

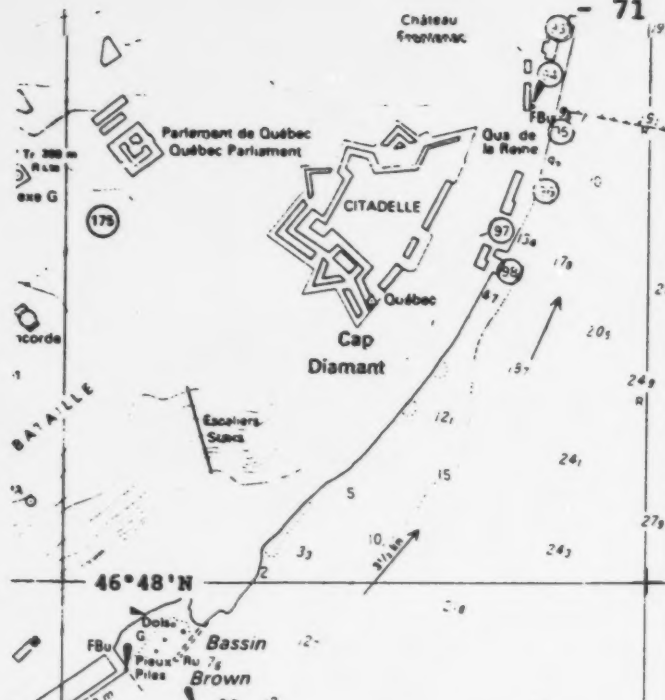
- excessive use of the bow thruster to move the forepart of the vessel out towards open water while moving astern made the task of the tug more difficult, as the tug also attempted to pull the stern of the vessel towards the middle of the river.
- the tidal current was flooding at about 3 knots further complicating the departure manoeuvre, and
- the vessel grounded while moving astern without those on the bridge being immediately aware. The grounding meant the efforts of the tug were to no avail and the main engine was prevented from starting because the propeller was fouled.

Other Findings

There is limited manoeuvring room for tankers which use section 86, the inner berth at the Ultramar terminal in the Port of Quebec.

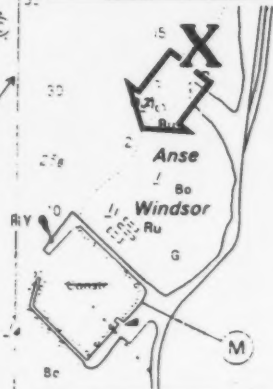
The ruins of the old wooden wharf located downstream of the tanker terminal are not marked by a light or any other readily identifiable navigation mark.

- 71 -



VIEW TO SW
FROM "X"

VUE DU S-O À PARTIR
DU POINT "X"



CURRENT
COURANT

TUG
REMORQUEUR

"HUBERT GAUCHER"
AGROUND

"HUBERT GAUCHER"
ÉCHOUE

"HUBERT GAUCHER"
SECTION OF
CHS CHART
No. 1316

SECTION DE
LA CARTE N° 1316
DU SHC

DEPTHS IN
METRES

PROFONDEURS
EN MÈTRES

71°13'W

71°12'W

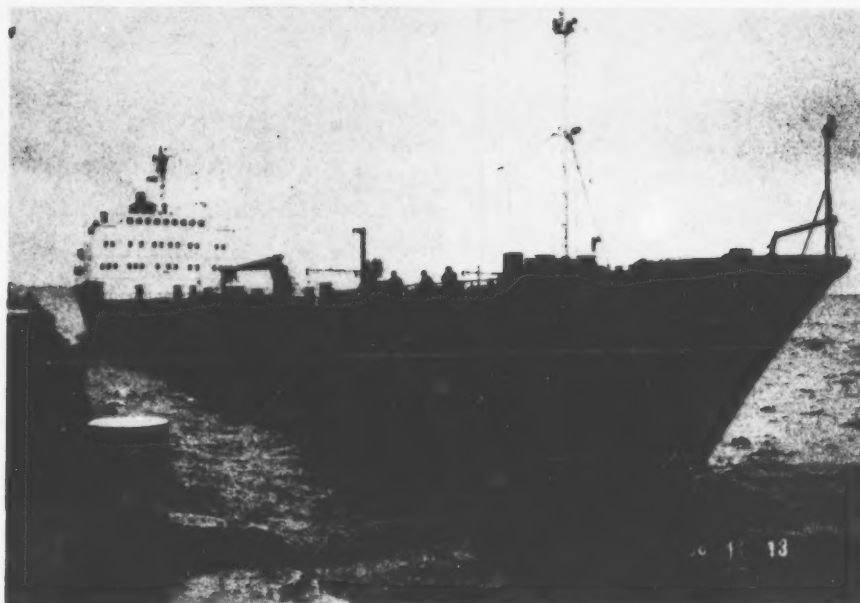
71°11'W

SAINT-DAVID-de-l'AUBERIVIÈRE



Anse Fréchette
Elevs Elevated

"ARCTURUS"



**Arriving at Bronte
Arrivée à Bronte**

"ARCTURUS"

Grounding in Lac Saint-François, Que., November 11, 1988.

Summary

The "ARCTURUS" is a Panamanian registered chemical tanker of 5,589 gross tons built in Helsingor, Denmark, in 1969. She has 8 centre and 14 wing tanks with double-bottom tanks beneath the centre tanks only. Her bridge, engine-room and accommodation are located aft.

On October 27, 1988, the vessel sailed from Fos, France, bound for Bronte, Ontario with a cargo of 6,407 t of methyl tertiary butyl ether, a toxic and highly flammable gasoline additive. After an uneventful transatlantic crossing and a brief stop-over at Pointe-aux-Trembles, Que., the "ARCTURUS" began her upbound Seaway passage at 0917, November 11.

At 1815, the vessel cleared upper Beauharnois lock proceeding under the conduct of a Seaway pilot. The vessel passed St. Louis bridge at 1850 and, soon after, the master left the bridge for a meal and a rest. At this time, there remained the pilot, a watchkeeping officer (OOW) and a quartermaster on the bridge. The weather was fine and clear with a light south-westerly wind and a calm sea. The starboard radar only was in operation and was reported to be performing adequately on the 1.5 mile range. Both radar and visual aids were being monitored during the transit. The OOW was reportedly alternating between a separate adjoining chart-room and the wheel-house and, on occasion, took the helm when the quartermaster went below for a brief period.

After passing buoy D9 at Saint-Zotique, the vessel was brought on to a course of 243° until she was abeam of buoy D13 when the quartermaster was ordered to steer 212°. At this point, it was not appreciated that an error had been made and at 2015, the vessel grounded smoothly between buoys D13 and D17 at an estimated speed of 12 knots and on a heading of 223°. It had been realized the next ranges, which were in sight, were open but this was not unusual because of the normal wide swing at D17.

The main engines were put astern but the vessel remained aground and the grounding was reported by the pilot to Seaway Beauharnois. Internal soundings indicated no damage or leakage.

Following an assessment by a Seaway inspector, the ballast in the forward double bottom tanks was pumped out and cargo was transferred from forward tanks to after tanks. The vessel was then subsequently refloated at 0915, November 12,

and after a survey by the Seaway inspector, she was allowed to continue her voyage. The "ARCTURUS" arrived at Bronte at approximately 1130, November 13, where sample tests of the cargo by an surveyor from the consignee revealed neither breach of the vessel nor contamination of the cargo.

Findings

The Panamanian chemical tanker "ARCTURUS" grounded in darkness but otherwise good weather conditions in Lac Saint-François due to navigational error, whilst under the conduct of a Canadian pilot.

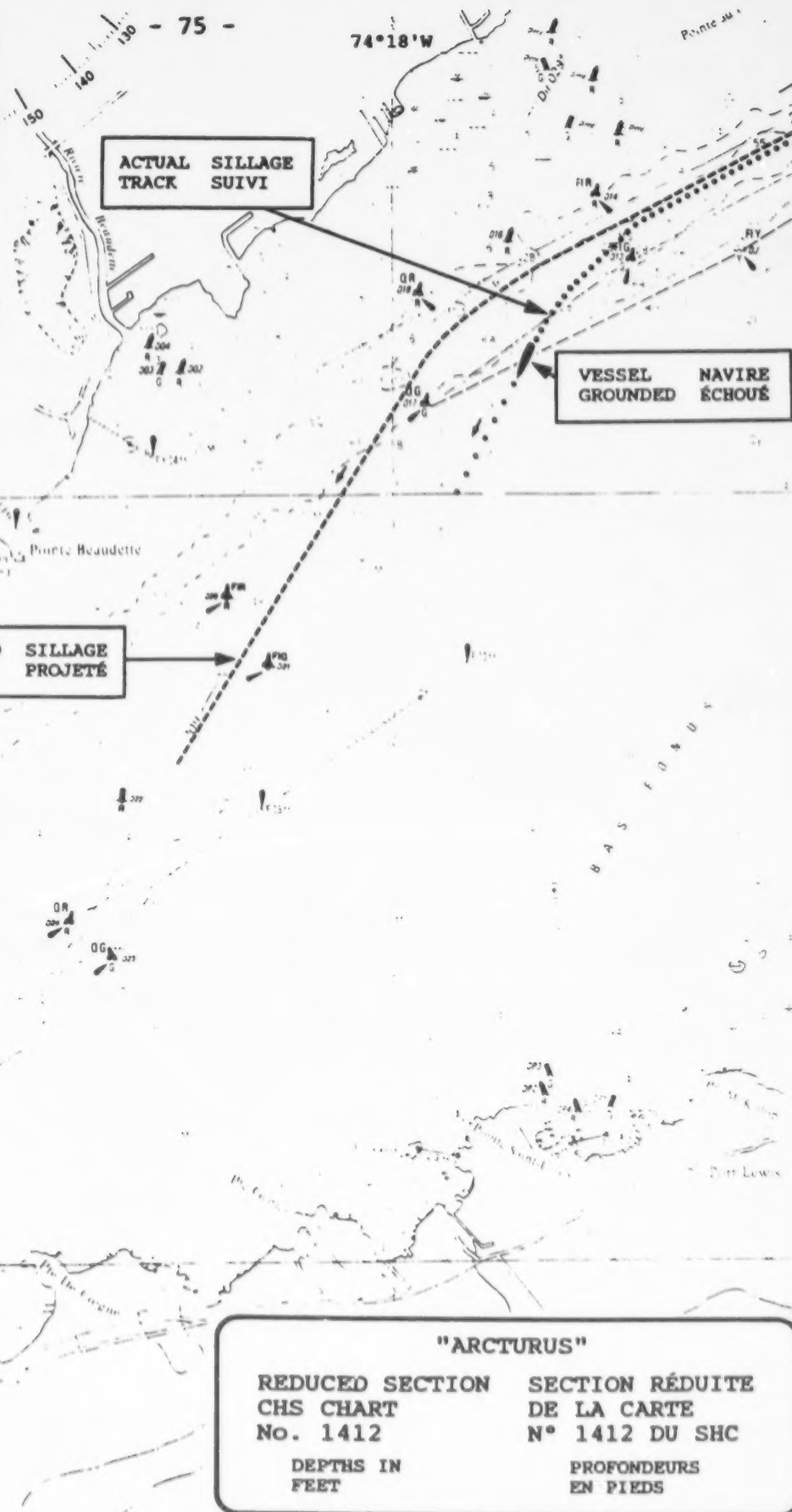
It would appear that the following factors contributed to this casualty:

- the pilot mistook buoy D13 for buoy D17 and altered the course of the vessel in the wrong position, and
- the watch officer was not in the wheel-house at the precise time and so did not monitor the pilot's navigational intentions.

Other Findings

The watch officer maintained no progressive record of the vessel's position or movements.

The qualifications of the watch officer were not adequate for the registered tonnage of the vessel.



"ARCTURUS"

REDUCED SECTION CHS CHART No. 1412 DEPTHS IN FEET	SECTION RÉDUITE DE LA CARTE N° 1412 DU SHC PROFONDEURS EN PIEDS
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"SOREN TH."



Views of vessel aground. Vues du navire échoué.

"SOREN TH."

Grounding in the St. Lawrence Seaway, November 23, 1988.

Summary

The "SOREN TH." is a 499 gross ton, two-hold, general cargo vessel built in Svenborg, Denmark in 1971 and registered in Faaborg. Her bridge, accommodation and machinery space are located aft and the main propulsion is controllable from the bridge.

When the vessel arrived in Montreal on November 21, 1988, en route from Naples, Italy, to Cleveland, Ohio, with a cargo of machinery, a technician was called to service one of her radar sets. Her other radar set was totally inoperative. The serviced set again ceased to function shortly after the "SOREN TH." began her upbound Seaway passage but the vessel continued under the conduct of a Seaway pilot.

A weather forecast issued at 0300, November 23, predicted light variable winds with a visibility of 5 miles or more except locally lowering to 2 miles in mist. However, shortly after the "SOREN TH." cleared Iroquois lock at 0622, the visibility decreased to less than a cable and, at 0735, the vessel anchored within the channel, off buoy 124, when the visibility dropped to zero.

By 0830, Chimney Island was visible at 2 miles and the anchor was weighed and the vessel proceeded at half speed, approximately 4 knots. However, shortly thereafter the visibility again deteriorated rapidly to virtually zero and speed was reduced to 'dead slow ahead' with the vessel on a course of 241°G, gyro error 5° high. It was reported that there was a local south-easterly breeze of 10 knots and a northerly cross-current of from 2 to 3 knots.

At 0843, the engine was stopped and at 0845, the vessel was felt to touch bottom on a heading of 244°(G). The engine was put to full astern and then, as the vessel moved slightly, to half ahead but she had firmly grounded.

Several unsuccessful attempts were made to refloat her but the "SOREN TH." remained aground until 1550, November 25 when she was towed free after transferring her fuel oil into the workboat/tender "VEZINA NO. 3".

An underwater inspection at Prescott revealed some damage but no holing and, after refuelling, the vessel departed at 2020, November 25, for Cleveland and arrived there November 28, 1988.

Findings

The small Danish freighter "SOREN TH.", under the conduct of a Canadian pilot, grounded and was damaged south of Lame Squaw Island in the St. Lawrence Seaway system due to the effects of a strong cross-current as the vessel was stopped in dense fog.

It would appear that the following factors contributed to this casualty:

- the recently repaired radar equipment failed soon after entering the Seaway system;
- the second radar equipment was inoperative and had been for some time, and
- navigation was undertaken in the Seaway during conditions of restricted visibility without a usable radar unit.

Other Findings

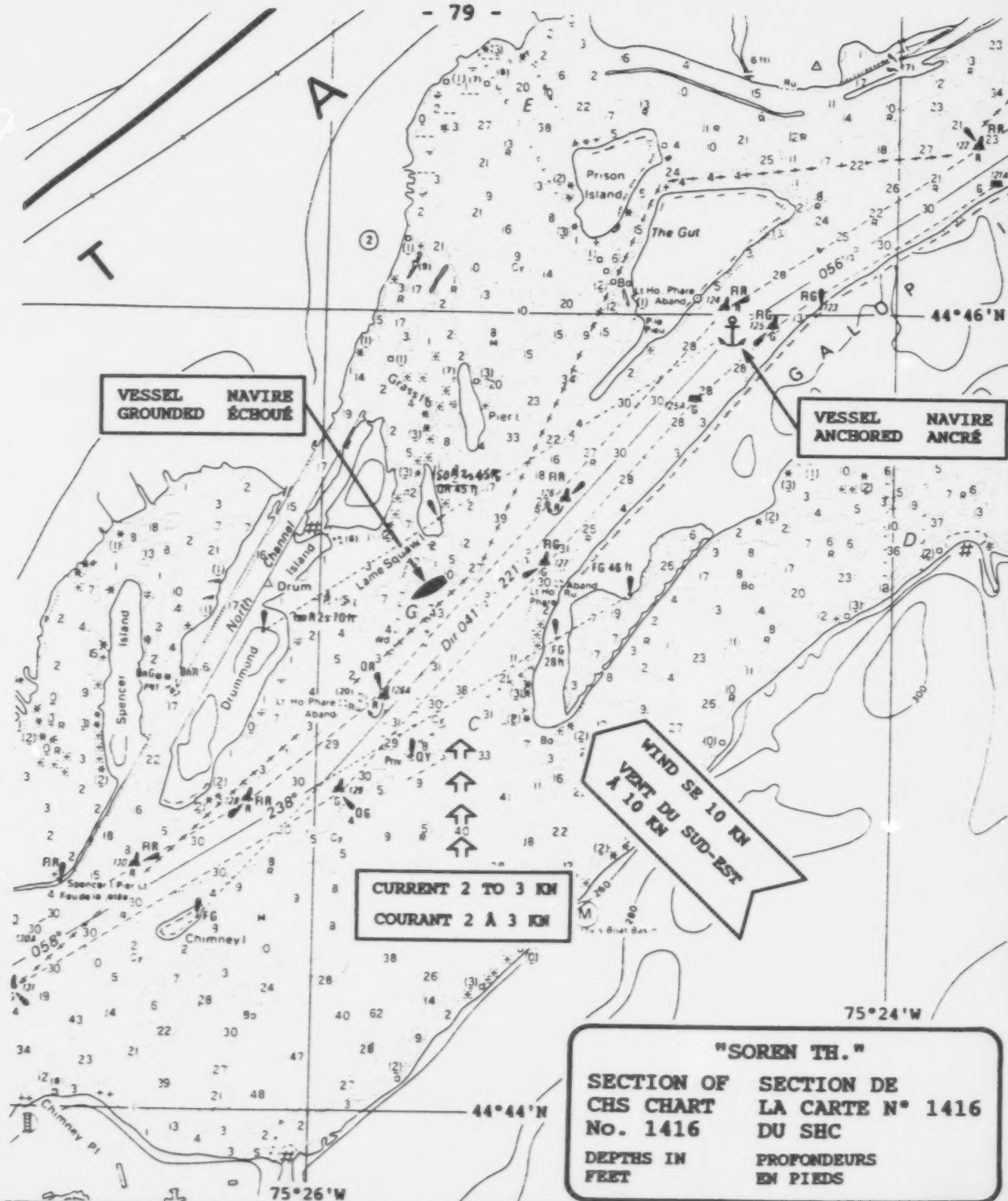
Upon her voluntary entry into the Ecareg system, the vessel did not report any malfunction of the radar equipment as required by the Eastern Canada Traffic Zone Regulations.

The appropriate authorities were not advised of the fact that the vessel had no operable radar unit as required by the St. Lawrence Waterway Marine Traffic Regulations.

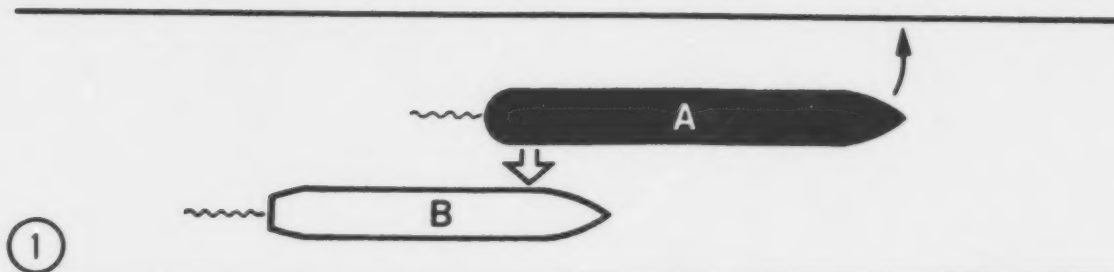
The vessel did not sound her fog signal in restricted visibility when she was under way, at anchor or aground as required by the Collision Regulations.

Visibility was less than forecast, but the forecasts had not been monitored by those having charge of the vessel.

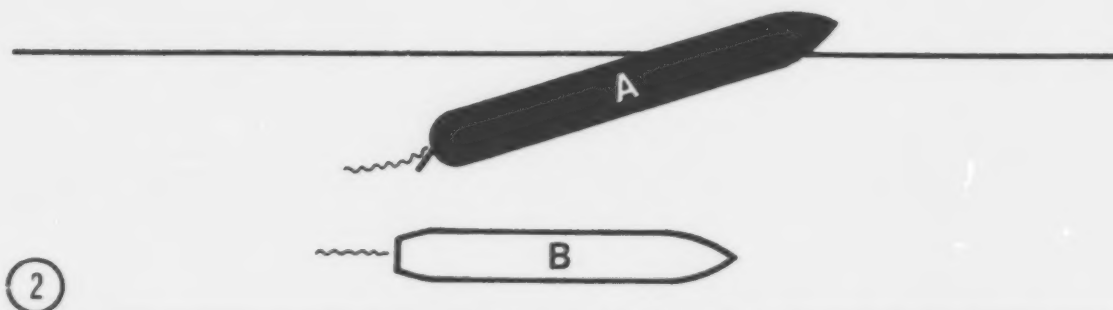
The gyro error of +5° is not considered to have been a contributory cause.



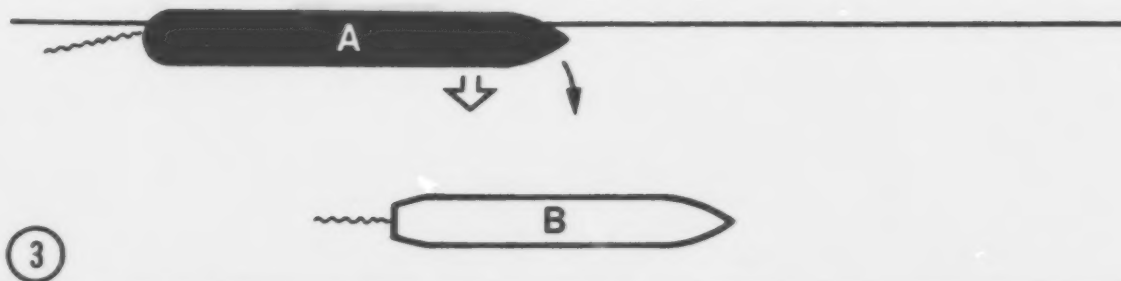
REPRESENTATION OF INTERACTION EFFECTS EXPERIENCED
BY OVERTAKEN VESSEL DURING
OVERTAKING MANOEUVRES



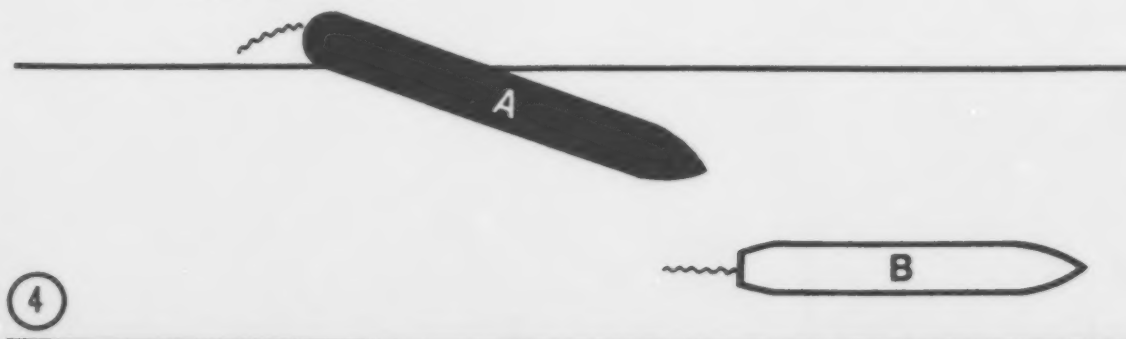
AS FOREPART OF OVERTAKING VESSEL 'B' COMES ABREAST,
STERN OF OVERTAKEN VESSEL 'A' IS DRAWN TOWARDS
'B', 'A' BEGINS SHEERING TOWARDS SIDE OF CHANNEL



'A' SHEERS TO SIDE OF CHANNEL DESPITE FULL COUNTER
RUDDER, SHEER PROBABLY AUGMENTED BY 'BANK SUCTION'



AS STERN OF OVERTAKING VESSEL COMES ABREAST, FOREPART
OF VESSEL 'A' IS DRAWN TOWARDS 'B', 'A' BEGINS SHEERING
BACK INTO CHANNEL



AS 'B' DRAWS AHEAD, 'A' SWINGS BACK INTO CHANNEL

"ALGOSOO"

**Bottom contact Lac Saint-François, Que.
December 12, 1988.**

Summary

The "ALGOSOO" is a 21,716 gross ton, Great Lakes self unloader built in Collingwood, Ont., in 1974, and registered in Sault Ste Marie, Ont and the "PRESTIGIOUS" is a 14,290 gross ton, geared bulk carrier built in Japan, in 1978, and registered in Hong Kong.

On the afternoon of December 12, 1988, the "ALGOSOO" was downbound in Lac Saint-François en route to the port of Valleyfield, Quebec, where she would discharge part of her cargo of salt. As she neared the eastern end of Lac Saint-François, in the approaches to the Beauharnois Canal, the "ALGOSOO" was overtaken by the "PRESTIGIOUS". The "PRESTIGIOUS" had a cargo of steel products and magnetite and was bound for Baltimore. The interaction between the two vessels when the overtaking manoeuvre occurred was reportedly the cause of the "ALGOSOO" sheering to the side of the channel and, despite full counter helm, briefly contacting the bottom heavily.

At the time of the casualty the weather was reported to be cloudy and clear with the visibility unrestricted except for occasional patches of sea smoke, the wind was light and the air temperature was reported to be about -10°C.

The "ALGOSOO" suffered some bottom damage and was taking water in the forepeak but was able to continue her voyage after inspection. The "PRESTIGIOUS" suffered no damage but was arrested on arrival at Montreal. Arranging the vessel's release and awaiting daylight passage delayed the "PRESTIGIOUS" until the following day. Permanent repairs to the "ALGOSOO", estimated to cost about \$250,000 were postponed to the next dry-docking.

The effects felt by the "ALGOSOO" as the "PRESTIGIOUS" overtook her were severe but typical of those caused by the interaction between vessels during such a manoeuvre. Initially, as her stern was drawn to starboard towards the "PRESTIGIOUS", the "ALGOSOO" began to swing to port out of the channel then, as the other vessel passed, the "ALGOSOO" experienced her forepart being drawn towards the "PRESTIGIOUS"; finally the "ALGOSOO" swung to starboard and then back into the channel. During this uncontrollable action the "ALGOSOO" struck bottom on her port side. The "ALGOSOO" was drawing 7.8 m fore and aft and the draught of the "PRESTIGIOUS" was 5.29 m forward and 6.62 m aft.

Findings

The "ALGOSOO" sheered uncontrollably out of the channel and touched bottom heavily, in darkness but otherwise good weather conditions, when overtaken by the "PRESTIGIOUS" while downbound in Lac Saint-François in the St. Lawrence Seaway on December 12, 1988. It would appear that the following sequence of events led to the casualty:

- the "ALGOSOO" had responded in an ambiguous manner to a radiotelephone request by the "PRESTIGIOUS" for an agreement regarding the overtaking manoeuvre;
- because of the ambiguous reply, the "PRESTIGIOUS" wrongly assumed that the "ALGOSOO" had agreed to the overtaking manoeuvre;
- the "PRESTIGIOUS" proceeded to overtake the "ALGOSOO" without an unequivocal indication from the "ALGOSOO" that she agreed to the location and timing of the manoeuvre;
- the "PRESTIGIOUS" carried out the overtaking manoeuvre in close proximity to a narrowing of the channel causing her to pass close to the "ALGOSOO";
- the "ALGOSOO" did not appreciate that she was in an imminent overtaking situation until the other vessel was close on her quarter, and
- the interaction effect between the vessels at the time of the overtaking caused the "ALGOSOO" to sheer unmanageably out of the channel such that she contacted the bottom heavily.

Other Findings

The "ALGOSOO" made no offer to slow down to assist the overtaking, although there was no pressing need for her to make time.

The overtaking was undertaken at a narrowing of the channel, rather than before, where there was increased room.

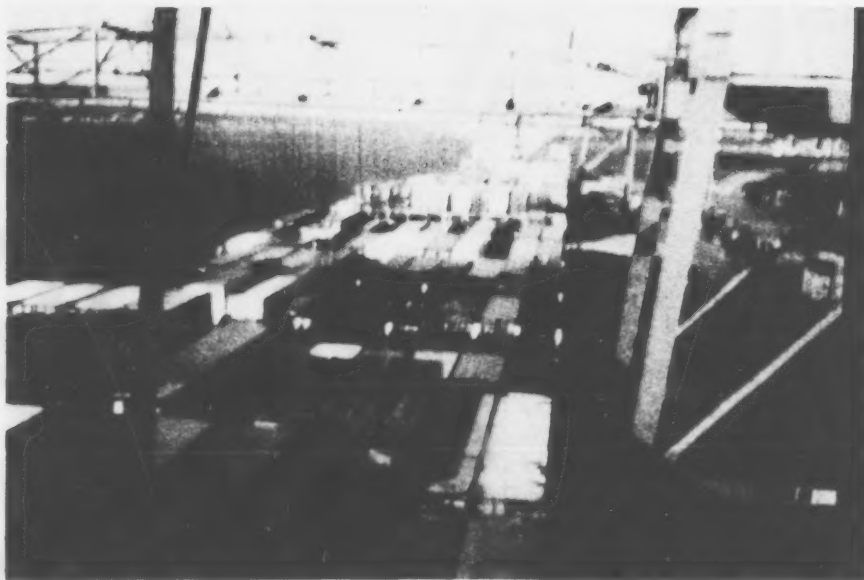
The Seaway Handbook when referring to the Great Lakes' Rules of the Road is out of date.

"ATLANTIC CONVEYOR"



Alongside terminal.

Le long du terminal.



View looking forward from bridge.

Vue de l'avant à partir de la passerelle.

"ATLANTIC CONVEYOR"

Bottom contact in Halifax Harbour, N.S., August 28, 1988.

Summary

The "ATLANTIC CONVEYOR" is a 'third generation', Ro-Ro and container vessel operating on a regular service between European and East Coast North American ports. She is of 58,438 gross tons was built in 1985, lengthened in 1987 and is registered in Liverpool, England.

At 0600, August 28, 1988, the "ATLANTIC CONVEYOR", inbound to the Fairview Cove container pier, embarked her pilot at the Halifax pilot station. Visibility during the transit of the harbour was poor, ranging from about 60 m to 120 m in thick fog. Winds were calm to light south-easterly. The vessel passed under the Angus L. MacDonald road bridge at approximately 0657 when she was steadied on a heading of 320°T; buoy H33 had been observed on radar on the port bow and the vessel's speed was between 6 and 7.5 knots. At approximately 0704 the foc'sle look-out reported buoy H33 abeam of the port bow; the look-out had been instructed to watch for that buoy and the pilot immediately ordered 'hard-a-port' and 'half ahead' to bring the vessel onto a course to pass under the A. Murray MacRay road bridge. Buoy H33 had temporarily been placed some 3 months previously to mark an 11.1 m shoal patch which was a concern to the deep draught container vessels transiting The Narrows. This buoy, however, also made it more difficult for large vessels, not restricted by draught over the shoal, to make this turn.

Buoy H33 was also visually observed from the vessel's bridge on the port beam at a distance of approximately 60 m as she passed. Shortly thereafter both the pilot and chief officer, who were both observing the radars, became concerned that the vessel was not coming around quickly enough and advised the master. The tide at the time was in spring flood, estimated at between 1 and 2 knots, astern of the vessel. Before any further action could be taken the "ATLANTIC CONVEYOR" touched bottom at approximately 0706 on the northern shore of The Narrows between Norris Cove and Tufts Cove, on a heading of approximately 305°T and swinging to port.

The master temporarily assumed the con of the vessel, ordered the helm hard-a-starboard and the engines half ahead. The vessel was then steadied up onto a course of approximately 290°T and passed safely beneath the A. Murray MacKay bridge at approximately 0712.

VTs noted that the vessel was to the north of the channel and communicated with her but did not appreciate that

she had contacted the bottom. The vessel berthed at Fairview Cove terminal at 0803 and divers found that the vessel had sustained damage on her starboard side to the bilge keel and adjacent plating and internals causing a slight leak into a ballast tank; all propeller blades were also damaged. There were no injuries or pollution as a result of this incident and repairs were expected to cost at least \$200,000.

Findings

The U.K.-registered container and Ro/Ro vessel "ATLANTIC CONVEYOR" contacted the bottom on the north side of The Narrows while entering Halifax Harbour on August 28, 1988, in conditions of poor visibility, due to an error in navigation. It would appear that the following factors contributed to this casualty:

- visibility was in the order of 100 m and, apart from visual reference to buoy H33, navigation was by radar;
- the decision to visually sight buoy H33 in the prevailing conditions, before initiating the turn to port, resulted in the turn being made too late;
- there was a strong flood tide acting on the vessel during the turn; and
- buoy H33 restricted this vessel's manoeuvring room in that area.

Other Findings

The movement of vessels with increased draught and the delay in dredging the shoal area off Pier 9 led to the establishment of buoy H33.

There was no record in the Halifax/Dartmouth Bridge Commission logbooks of receiving any message concerning the difficulties experienced by the "ATLANTIC CONVEYOR".

This casualty highlights the difficulty and risks in navigating very large vessels in restricted waters in conditions of poor visibility.

There was some confusion in the official reporting of the casualty and, in turn, the VTS radar video recording was automatically erased.

Glossary

'Abort' control	Operates system designed to reduce tension in towline
Bow thruster	Athwartship thrust propeller located forward
Brigantine	Two-masted sailing vessel with square rig on the foremast and fore and aft rig on the main mast.
CCGC	Canadian Coast Guard Cutter
CGGS	Canadian Coast Guard Ship
CGRS	Coast Guard Radio Station
CMRA	Canadian Marine Rescue Auxiliary
CPR	Canadian Pacific Railway; cardio-pulmonary resuscitation
Capstan	Anchor winch with vertical power shaft
Con	Direct the steering of a vessel, location from which this is done
Deviation	Deflection of compass needle caused by magnetic condition of vessel and contents
'Dozer' boat	Small manouvreable craft intended for use in sorting, stowing logs
Ecareg	Eastern Canada Traffic System
FPV	Fishing Patrol Vessel
FRB	Fast Response Boat
'Gas-free'	Condition of tank, compartment which has been tested and found sufficiently free of toxic or explosive gases
to be 'Girded'	Condition of tug being dragged sideways by athwartship towline pull, can lead to capsizing, foundering

'Gob' rope	Short length of rope to the towline to prevent girding
'Heavy' fuel	Low cost, high density, low grade bunker oil generally requiring heating before using
'Hot' work	Repairs involving burning and/or welding
'Interaction' effect	Forces felt on vessels passing at close quarters
'Kort' nozzle	Cylindrical casing fitted around propeller
LPG	Liquified petroleum gas
'May day'	Prefix to distress message, hence such message
Motorman	Unlicensed member of crew employed in engine-room
Notch	(V-shaped) indentation built into stern of barge to take forepart of tug when in pushing mode
OOW	Officer of the watch
OSC	On-scene commander
Pike pole	Long rod, fitted with hook, used in handling lines
RCC	Rescue Co-ordination Centre
Ro-Ro	Roll on - roll off
SAR	Search and Rescue
Slops	Remains of dirty tank washing water
Spring tides	Semi-diurnal tides with the greatest range, normally near full and new moon
VHF (R/T)	Very high frequency (radiotelephone)
VTs	Vessel Traffic Services